

CONSUMERS' RESEARCH

Bulletin



October 1948 CONTENTS

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CONSUMERS' RESEARCH



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BULLETIN

October 1948

Off the Editor's Chest

CONSUMERS who would like to get at one of the basic causes for present high prices for food and other agricultural products will do well to give some study to the farm parity program, also known as the farm price support policy. Parity is a yardstick for measuring farm prices so as to keep the prices of what the farmer sells and the prices of what he buys in the same relationship as for the immediately preceding 10 years. When the cost of living (or the prices of what the farmer *buys*) goes up and there is an abundant crop of potatoes, for example, so that the price of potatoes would normally go down, the U.S. Department of Agriculture steps in and "supports the price," i.e., keeps the price the consumer pays for potatoes from going down.

The price support program is carried out in various ways, sometimes by outright purchases, sometimes by "loans" to producers. When the U. S. Department of Agriculture purchases a crop for support purposes, it is usually forced to destroy it or divert it to non-food use or in some other way act to keep it off the market where it would tend to bring about lower prices. About the only successful outlet for giving food away without reducing market prices paid by consumers generally has been the federal school lunch program and there is apparently a limit to the amount that can be disposed of in this fashion.

Until the end of 1949 the prices of most agricultural commodities must be supported at 90 per-

cent of parity. Included are chickens, eggs, milk, hogs, potatoes, edible dry beans and dry peas, turkeys, soybeans, flaxseed (for oil), peanuts (for oil), sweet potatoes, and cotton. The crops that will be supported at 90 percent of parity until July 1950 where farmers cooperate with the U.S. Department of Agriculture on acreage limitations and marketing agreements are wheat, corn, tobacco, rice, peanuts, and cotton.

The money which the federal government uses to subsidize farmers by the parity program is, of course, that which is collected as taxes from everybody. Thus consumers pay doubly; first in taxes, and second in high prices for food, *which the government acts to keep high. They have in effect paid the government to take money out of their pockets and pocketbooks. On potatoes alone in 1947, the U.S. Department of Agriculture has reported spending nearly forty million dollars to "support" prices, and there were bitter complaints that the prices of potatoes were too high for people to buy.*

In addition to paying good tax money to keep the prices of food high, the consumer is gouged in another respect. The quality of the foods on the market is often poor. An agricultural economist at the University of Illinois reported in July 1948 that poultry processors were complaining about the large amount of low-quality poultry that was being produced. It appears that the storage stocks of second-grade poultry are the largest on record

(Continued on page 23)

Scientific and Technical Experts and Editors: F. J. Schlunk, R. Joyce, M. C. Phillips, Helen P. Alleman, A. R. Greenleaf, Charles L. Bernier, and Dwight C. Aten. **Editorial Assistants:** Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price;** 47, 48—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least 5 weeks before it is to take effect, accompanying your notice with statement of your old address with name in full. At least a month's notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

★★★For a brief cumulative index of 1948 BULLETINS preceding this issue, see page 26.

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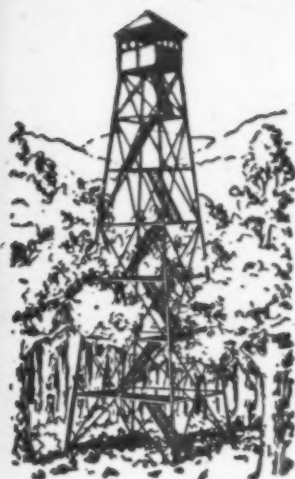
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The Consumers' Observation Post

IF YOU ARE THE PROUD POSSESSOR OF A NEW AUTOMOBILE of one of the makes that has a low front-end air intake, avoid parking too closely behind a taxicab which has the motor running. That is the substance of a warning from the Massachusetts Department of Public Health which reports the death of a man at the wheel of a new car which had been parked bumper-to-bumper behind a taxi, the motor of which had been idling for some time while the driver dozed. Subsequent tests indicated that in an interval of only 20 minutes carbon monoxide through the front air intakes of the new car built up to a concentration sufficient to cause death.

* * *

QUALITY IN CUT FLOWERS is best determined by weight, advises Kenneth Post in Farm Research. He points out that the size of an iris flower, for example, is largely determined by the weight of the stem. Large, heavy, long stems bear larger flowers than do short, thin stems. It is not expected, however, that the consumer will walk into the florist shop and ask for a pound of iris, roses, or chrysanthemums. Weight-grading is intended primarily to help the retail florist specify what he wants the wholesaler to send, for, at the present time, the retailer never knows what he will get when he orders, say, pompon chrysanthemums.

* * *

THE "MARKET RESEARCH RACKET" has recently mushroomed in all parts of the country, reports the National Better Business Bureau. Under the pretense that they are making a "survey," in numerous instances, salesmen get past the receptionist to their prospect. In many cases the professed purpose of getting consumer buying and preference information has, in the words of the National B.B.B., been found to be a "complete sham." There are, of course, trained researchers who really are engaged in making market surveys and taking public opinion polls, but the consumer will be well advised to look with positive suspicion on anyone approaching him with a questionnaire and something to sell. In such cases, get rid of the salesman (but get his full name and address and connections in detail, if you can) and promptly get into touch with your local Better Business Bureau.

* * *

LABELING REQUIREMENTS for substandard canned green and wax beans have been relaxed by Federal Security Administrator Oscar R. Ewing, according to Food Field Reporter. Heretofore canned beans of this low (fourth) grade have carried on their label "Good Food--Not High Grade." Now under Administrator Ewing's ruling there are four optional statements that may be used: "Excessive Number Very Short Pieces," "Excessive Number Blemished Units," "Excessive Number Unstemmed Units," or "Excessive Foreign Material" when the product is deficient in any of these respects. Consumers may in many cases be well advised to avoid buying beans so labeled, for many a homemaker has discovered that canned string beans even of the highest quality are not too popular with her family.

* * *

MANUFACTURERS OF RADIO-PHONOGRAPHS have a tendency to use too much space for records and thereby take away space which is needed for proper "baffling" of the speaker. This is definitely objectionable from the standpoint of musical reproduction, for good sound production by a loud-speaker, especially full and solid reproduction of the bass tones of larger instruments, requires a sizable baffle. Indeed, even the largest baffle practicable in a living room of ordinary size is not big enough to give really good reproduction of low tones. (For the person who likes to have music reproduced well, it would be

better from the tone quality standpoint if all of the record space were sacrificed and made available for speaker baffling.) The manufacturers in skimping on speaker space have merely provided what consumers want, and, of course, since the quality of musical reproduction of the great majority of radio-phonographs is distinctly poor, consumers are likely to consider their radio-phonograph as an article of furniture as much as they look upon it as an electronic and acoustical instrument. However, it will be of help to consumers who want the best possible reproduction to know the disadvantages involved when extra record space is provided at the expense of adequate baffle area for the speaker.

* * *

COLD-WAVE PERMANENTS have been declared "safe" by the Food and Drug Administration after tests on animals for two and a half years. The F. & D. Admin. reports that it has been unable to find any indication of serious injury caused by the cold-wave process, but admits that complaints of allergic reaction from cold-wave permanents have been received. A high food and drug official also advises beauty operators to wear rubber gloves in applying cold-wave solutions. No doubt the same warning should apply to the woman who uses a home permanent wave kit of the cold-wave type. New York State, which at one time had a law on the statute books which might make it possible to arrest a woman for giving herself or a friend a home permanent, has in the past year eliminated this possibility by passage of the Strong-Mahoney Bill.

* * *

BEFORE IMBIBING CASTOR OIL-LABELED NASCO BRAND, smell it carefully. If it has an odor of turpentine, pour it down the drain, for turpentine is, of course, quite poisonous. The Food and Drug Administration has found a number of bottles of spirits of turpentine mislabeled castor oil, and although the National Specialty Co. which packaged the product has endeavored to recall all shipments, it is possible that some of the bottles have not been traced and recovered.

* * *

FEVER, in some cases, is caused by food allergy, reports Dr. Albert H. Rowe, lecturer in medicine at the University of California. Discovering the offending food and eliminating it from the diet is likely to effect recovery, where bed rest and hospitalization afford little relief. Dr. Rowe describes one patient who had a history of life-long weakness, dislike of milk, and intestinal difficulties. After an elimination diet revealed that milk was causing the trouble, and it was excluded, the patient was able to leave the hospital in a week's time, and in five years had regained her health.

* * *

WOOL PRODUCTION in the United States is at its lowest point in many years. In order to meet our requirements it is necessary to import large quantities, particularly of the high-quality fibers. Prices on the world market continue to advance. Good fine Australian wool, for example, has increased about 80 percent in the past year. The obvious conclusion is that consumers must expect to pay higher prices for woolen clothing during the coming season.

* * *

COPPER is to be considered one of the common causes of so-called food poisoning, in the opinion of the Journal of the American Medical Association. It appears that some shellfish may have an unusually high copper content that will cause distress when eaten. Soda "pop" which contains copper as a contaminant may produce nausea. Hotels and restaurants which use copper utensils in cooking should be particularly careful to make certain that the copper is always kept retinned over the whole surface, with pure tin (not a lead-tin alloy that has sometimes been used). This keeps copper from coming into contact with the food

* * *

IT MAY NOT BE A BAD TOOTH, but a neurosis that gives you aches and pains throughout your body. That's the theory advanced by Dr. Edward O. Harper, assistant professor of psychiatry at Western Reserve University. The professor holds that many a good tooth has been needlessly sacrificed on account of the "focus-of-infection" theory which holds infected teeth to be a likely cause of all sorts of maladies.

(The continuation of this section is on page 29)

Two Refrigerators and a Refrigerator-Freezer Combination

THE test methods used on the refrigerators reported herewith were the same as those used for the refrigerators and combination refrigerator-freezer reported in CR's September 1947 issue, and because of limitations of space, the discussion of methods is not repeated here.

By experience it has been learned that the cost of operating a refrigerator loaded with food and used under average conditions in a home will often be close to the operating cost determined under test conditions in a room held accurately and constantly at 80°F. Operating costs at 80°F have been approximately determined by calculation and are given in the listings. If there is a considerable "food load," which implies putting into the refrigerator from time to time foods which are warm or at room temperature, the performance of the refrigerator at a room temperature of 90° will more accurately approximate actual cost of electricity for the refrigerator in ordinary use.

Operating costs are figured at 3½¢ per kilowatt-hour. It will be noted that the cost of operation of the GE combination refrigerator-freezer at a room temperature of 80°F would be approximately \$1.70 a month for 6.8 cu. ft. of storage space and 1½ cu. ft. of freezer space. This was approximately two and one-quarter times the cost of operation of an ordinary or standard refrigerator, such as the *Frigidaire* which had over 1 cu. ft. or 15 percent more storage space. Cost of operation of the GE combination also was about 30 percent higher than for the *Admiral Dual-Temp* (a unit of similar type reported in the September 1947 BULLETIN). In other words, it will cost the consumer about \$1 a month to operate the 1½ cu. ft. of freezer space alone, on top of 70¢ a month for operation of 6.8 cu. ft. of refrigerator space. Such an expenditure may be justified, in many cases, from the standpoint of convenience, but it is CR's view that a good many consumers will not wish to use the combination refrigerator-freezer if they are fully aware of the considerable extra money they

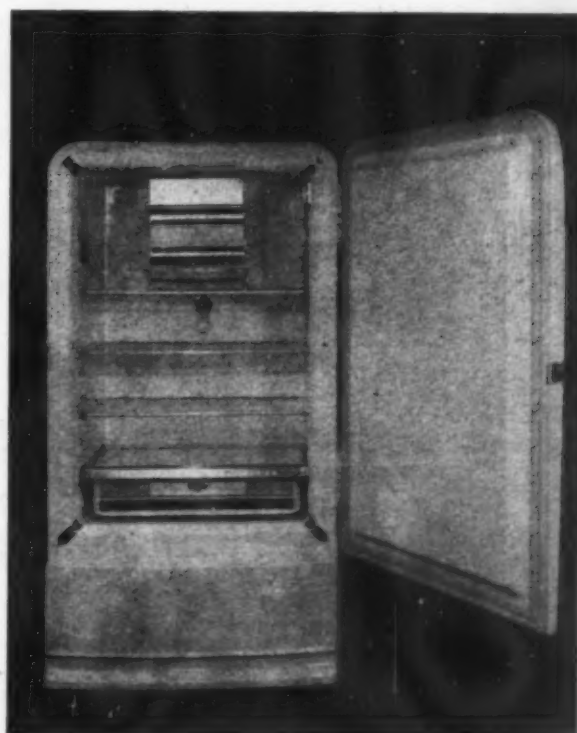
will have to pay for operation in order to gain a small amount of freezer space. The consumer who really needs a considerable amount of freezer space will be better off from the operating cost standpoint with a standard refrigerator and a small separate freezer. For example, the total cost per month for operating the 7.8 cu. ft. *Frigidaire* refrigerator and the 7.8 cu. ft. *Hotpoint* freezer, a combination which would provide 5 times as much freezer space¹ as the GE refrigerator-freezer, would amount to only about \$2.30 per month, approximately.

Electric Refrigerators

A. Recommended

Frigidaire MJ-7 (Frigidaire Division of General Motors Corp., Dayton, Ohio) \$239.75. Over-all size: 57.3 in.

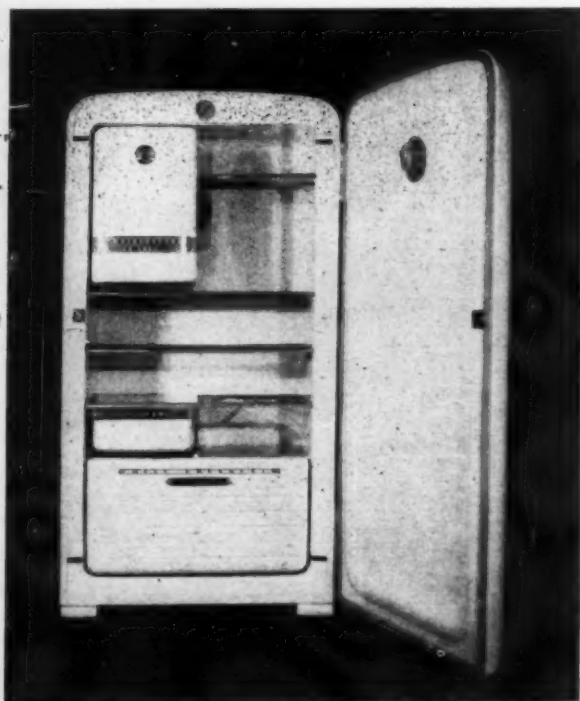
¹Plus an additional cu. ft. of storage (refrigerator) space.



Frigidaire MJ-7

high, 31.5 in. wide, 25 in. deep. Total rated capacity, 7.7 cu. ft. (actual, 7.84 cu. ft.). Rated shelf area, 14.4 sq. ft. (actual, 14.7 sq. ft.). Compressor, sealed type. Condenser, finned-tube type, mounted in base of refrigerator on a horizontal plane and cooled by natural circulation of air. Refrigerant, *Freon 12*. Freezer compartment (evaporator) with storage capacity of 0.72 cu. ft. located at top of center of food compartment, divided into two parts by a refrigerated shelf. Three ice-cube trays to make 56 cubes (approximately 7 lb.) of ice. Time required to lower temperature to a stable value (45.3°F) with room at 90° and motor running 36.7% of the time, 7.5 hours. Cost of operation at 91° with an average temperature inside box of 43°, \$1 per month (12.7c per cu. ft.), lower than average. This would correspond to about 75c per month with an 80° average room temperature (see text). With temperature control set at coldest position, maximum time required to freeze approximately 7 lb. of ice cubes, 3.9 hours (motor ran continuously during this period). Temperature in cabinet during cube-freezing period: maximum, 49.8°; minimum, 37.4° (satisfactory).

Kelvinator, Model CM-R (Nash-Kelvinator Corp., Detroit) \$299.95. Over-all size: 60.1 in. high, 31.4 in. wide, 27.5 in. deep. Total rated capacity, 10.66 cu. ft. (actual, 10.82 cu. ft.). Rated shelf area, 16.5 sq. ft. (actual, 15.7 sq. ft.). Compressor, sealed type. Condenser consisted of a length of tubing fastened to a duct at rear of cabinet and cooled by natural circulation of air. Refrigerant, *Freon 12*. Freezer compartment



Kelvinator, Model CM-R

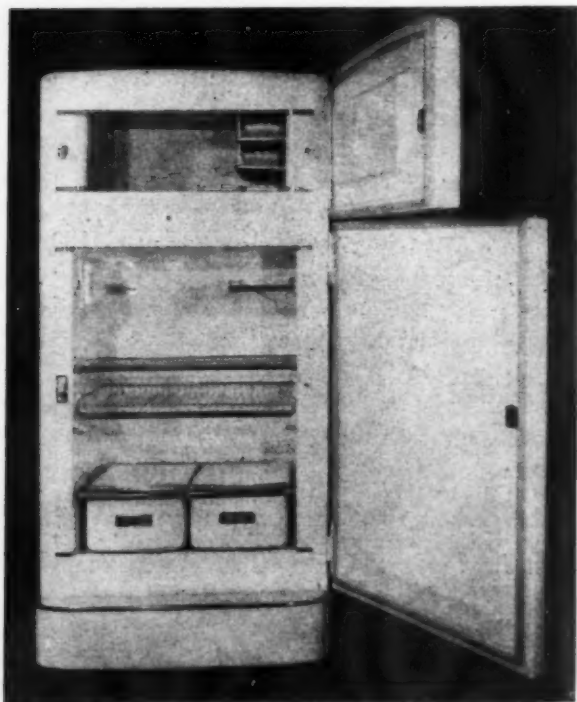
(evaporator) with storage capacity of 1.15 cu. ft., located at upper left-hand corner of food compartment, contained 2 shelves. Four ice-cube trays to make 60 cubes (7¼ lb.) of ice. The food compartment occupied the entire height of the cabinet at the front, but the

lower part of the rear wall sloped at an angle of about 40° to the front to make room for the compressor freezing mechanism; the lower front portion was occupied by a bin and formed part of the insulated and refrigerated interior. Time required to lower temperature in refrigerator to a stable value (42.5°F) with room at 90° and motor running 50% of the time, 8 hours (about average). Cost of operation at 90° with an average temperature inside box of 43°, \$1.47 per month (13.5c per cu. ft. per month), about average. This would correspond to about \$1.10 per month with an 80° room temperature (see text). With temperature control set at coldest position, time required to freeze ice cubes: 2 trays, 3 hours; remaining 2 trays, 4.1 hours. Motor ran continuously during freezing period. Temperature in cabinet during cube-freezing period: maximum, 51.5°; minimum, 31.5°.

Refrigerator Home-Freezer Combination

B. Intermediate

General Electric, Model NH-8E (General Electric Co., Schenectady, N.Y.) \$410. Over-all size: 63.4 in. high, 30 in. wide, 26.5 in. deep. Rated capacity of freezer, 1.5 cu. ft. (actual, 1.53 cu. ft.). Storage compartment, 6.7 cu. ft. (actual, 6.8 cu. ft.); butter compartment, 0.04 cu. ft.; making a total of 8.37 cu. ft. Rated shelf area: storage compartment, 10.9 sq. ft. (actual, 10.2 sq. ft.); freezer, 3.1 sq. ft. (actual, 3.0 sq. ft.). A combination refrigerator home-freezer with two insulated food-storage compartments which operate at different temperatures. The upper freezer compartment had two refrigerated shelves at one side, each wide enough for an ice-cube tray. The lower food compartment is refrigerated on the outer surface of



General Electric, Model NH-8E

the inside rear wall and is claimed to require no defrosting. (Any moisture which condenses on the walls runs into a gutter in the floor of food compartment and thence to a drip pan in the machine compartment.) A special recess and tray for a pound of butter, warmed by a small 6-watt electric heating element controlled by a thermostat is provided. Condenser, finned-tube type. Refrigerant, *Freon 12*. Four ice-cube trays to make 7 lb. of cubes. Time required to lower average temperature to a stable value: 37.8° in food compartment, 8.7° in freezer with room temperature of 91°, 5 hours (better than average). With freezer temperature control set at coldest position (9) time required to freeze 7 lb. of ice cubes, 2.4 hours (very good). Temperature in cabinet during freezing period: maximum, 43.6°; minimum, 42.2° (satisfactory). Cost of operation in no-load tests at 90.5° with an average temperature in storage compartment of 43°, in freezer compartment 8.2° with control set at 1 (warmest) in stor-

age, 5 (medium) in freezer, \$2.29 per month. This would correspond to approximately \$1.70 per month with a room temperature of 80° (see text), or about twice as much for 8.4 cu. ft. of refrigerator and freezer together as would be required for the 6.8 cu. ft. of refrigerator space alone. With the temperature control of storage compartment advanced to 5 (medium) and freezer to 9 (coldest) position, average temperature in storage compartment was 37.5°, in freezer 2.9°. Motor ran 47% of the time and cost of operation amounted to \$2.54 per month (\$1.90 at room temperature of 80°). In the load tests, with storage control set at warmest position and freezer control at coldest position using approximately 27 lb. of ice and 5 lb. of water as load, the temperature of the freezer compartment dropped to 2.8° (average) in 24 hours, while temperature in storage compartment remained constant at an average temperature of 42.7°. Motor ran 54% of the time during this period, at a cost of operation of 10c.

The Purchase of Band Instruments

IN the American educational system, from elementary school through college, the school band has assumed a position of great prominence. This has been due to the American love of spectacle, particularly in connection with football, favorite of all school and college sports. The type of music played at major events seems to have a glamour that maintains its popularity not only in competitive athletic exhibitions, but as concert music. Such performances remain high in favor, despite the almost complete disappearance of the professional concert band.

Even in the smaller towns it is customary for school boards to purchase the larger and less common instruments. The band members are required to furnish their own clarinets, flutes, cornets, and trombones. Parents with no knowledge of these instruments are consequently at the mercy of the dealers or supervisors. School boards are likewise dependent upon the honesty of advice given them.

It might be remarked at the outset that most instrumental supervisors in the schools are quite ethical. Some, however, have yielded to the temptation to accept commissions on sales to students. Dealers are also a generally reliable group, but they naturally are anxious to sell the more expensive articles. To some extent at least, this may be justified, for cheap instruments often turn out to be so bad as to be practically worthless in a band.

There are scientific difficulties in making a wind instrument that is near enough to perfection to be tolerable. The reader is referred to Redfield's "Music, a Science and an Art," for a technical clarification. These problems, involving conflicting qualities that have to be compromised to the best advantage, result in a great divergence in the quality of instruments at different price ranges. The first consideration to be settled is inevitably the price. When parents are asked to invest a sizable amount of money for their childrens' band equipment they expect some assurance that the article is usable and may have some resale value when, as is so often the case, Commencement Day marks the end of musical participation.

The purpose of this article is to offer some suggestions that will be helpful even when much advice is forthcoming from those in the profession and trade. An instrument is likely to be worth the price charged only when the manufacturer is substantial, dependable, and offers some guarantee of satisfaction. We shall furnish a list of band instrument makers presently.

There are several warnings that ought to be presented here. Since the war, we have been deluged with a flock of wind instruments, chiefly from Czechoslovakia and Italy, that are so poor in workmanship and material that most dealers will not touch them. It is a complete waste to spend money on such atrocities. (Do

not confuse these, however, with the superior instruments by famous European firms.) Another hazard is one which exists also in the piano trade. Large retailers frequently make a deal with some of the lesser manufacturers to make up for them a line of cheap instruments on which appears a trade name of their own invention. Mail-order houses indulge in this practice. It is definitely unwise to buy goods of unknown or disguised makes.

If children must be started with a low-cost instrument, it is essential to exercise care in selecting from a line made by a known, reliable maker. Resale and trade-in are then possible without too great a loss. Generally it is recommended that at least a medium-priced article in such a reliable line be selected where possible, for the cheapest is most likely to have little second-hand value.

Parents desiring to furnish material for children's band activities are advised to consult the bandmaster, find out what is available at the store, check with the accompanying list and, if possible, ask some experienced professional musician or superior amateur for an opinion about the particular item that may be proposed.

The following list was assembled from catalogs and consultation with band specialists and manufacturers. The gradual liberation of needed metals in this post-war period has made available greater quantities of more suitable materials, so that changes in the direction of better instruments have been rapid and significant. It would be impossible to offer a complete up-to-the-minute survey now or in the near future. The list may be considered as reasonably accurate as of the first of this year.

The writer has based recommendations on his own personal experience, the reputation of the manufacturers, and a questionnaire circulated among professionals whose judgment may be regarded as authoritative. The estimates of quality rating are obviously personal appraisals, but it is believed that they may be accepted as generally fair.

Key to gradations: (I) Excellent; (II) Very good; (III) Good medium quality; (IV) Fair.

General Manufacturers of Several Types

Vincent Bach Corp., 621 E. 216 St., N.Y.C. Brass instruments and cup mouth pieces. French horns, cornets,

trumpets, and trombones under the names *Stradivarius*, *Mercedes*, and *Mercury*, in order of price. (I)

Buescher Band Instrument Co., Elkhart, Ind. A complete line of band instruments at three price levels, starting with *True Tone* models. Saxophones among the best (I). Brass instruments satisfactory since the war (II). ¶Elkhart Band Instrument Co., Elkhart, Ind., is a subsidiary. A complete line of lower-priced instruments. A popular-priced line known as *Windsor*, for beginners only. (IV)

Conn Band Instrument Division of C.G. Conn, Ltd., Elkhart, Ind. Manufactures all brass and reed instruments. Claim the "most complete line of instruments manufactured under a single trade mark." (I) *Pan American*—more moderately-priced line.

Martin Band Instrument Co., Elkhart, Ind. Makers of brass instruments and saxophones. Long a dependable firm. Uses a trade name, *Handcraft*. (I)

F.E. Olds & Son, Inc., 1914 Raymond Ave., Los Angeles. Manufactures a quality line of trombones, trumpets, cornets, and French horns. Eastern distributor is the Chicago Musical Instrument Co., 30 E. Adams Bldg., Chicago. (I)

F.A. Reynolds Co., Inc., 2845 Prospect Ave., Cleveland. The complete *Reynolds* line and the popularly priced *Regent*. Controls the Ohio Band Instrument Co. (I)

H.N. White Co., 5225 Superior Ave., Cleveland. *King* band instruments. A dependable line, recommended for general reliability and workmanship. (I)

Blessing Band Inst. Co., Elkhart, Ind. This company presents a "complete line from the Super Artist cornet and trumpet to the Sousaphone." Distributed by Carl Fischer Musical Instrument Co., Inc., N.Y.C. (III)

Frank Holton & Co., Elkhorn, Wis. Brass instruments, cornets, trumpets, trombones. Available are the first line, the *Holton Collegiate* and the new *Holton Stratodyne*. This company sells direct to dealers only. All instruments bear the *Holton* name. (III)

York Band Instrument Co., Grand Rapids, Mich. Makers of band instruments and saxophones. Popularly known as the *House of York*. One of the oldest manufacturers in this field. (III)

Specialists In Particular Instruments

Flutes and Piccolos

Wm. S. Haynes (Boston) (I) • Powell (Boston) (I) • Selmer (Elkhart) (I) • W. T. Armstrong (Elkhart) (II) • Artley (II) • C. G. Conn (Elkhart) (II) • Pedler (Elkhart) (II) • Cundy-Bettoney (Boston) (III).

Clarinets

C.G. Conn (Elkhart) (I) • Penzel-Mueller (Long Island) (I) • H. & A. Selmer, Inc. (Elkhart) (I) • Joray (Denver) (II) • G. LeBlanc Co. (Kenosha) (II) • Pedler Co. (Elkhart) (II) • Cundy-Bettoney (Boston) (III) • G. Pruefer Mfg. Co. (Providence) (III).

Oboes

C.G. Conn (Elkhart) (I) • Lynton (Elkhart) (I) • Selmer (Elkhart) (I) • Moennig (Los Angeles) (II) • Penzel-Mueller (Long Island) Inactive but may appear later.

Bassoons

C.G. Conn (Elkhart) (I) • Moennig (Los Angeles) Inactive but may appear later.

Alto and Bass Clarinets

C.G. Conn (Elkhart) (I) • Selmer (Elkhart) (I) • LeBlanc (Kenosha) (II) • Pedler (Elkhart) (II).

Alto and Tenor Saxophones

Buescher (Elkhart) (I) • C.G. Conn (Elkhart) (I) • Martin (Elkhart) (I) • Selmer (Elkhart) (I) • King (See White) (Cleveland) (II).

Baritone Saxophones

Buescher (Elkhart) (I) • Conn (Elkhart) (I) • King (Cleveland) (II).

French Horn

Bach (I) • Conn (I) • King (I) • Olds (I) • Reynolds (I) • Sansone (New York) (I) • Geyer (Chicago) (II) • William Franck Co. (Chicago) (III)

Cornets and Trumpets

See manufacturers in Group (I).

Trombones

William Franck Co. (Chicago) (III)

Percussion

J.C. Deagan, Inc. (Chicago) Xylophones, marimbaphones, orchestra bells, bell lyras, chimes, vibraphones, etc. Does not make drums. (I)

Leedy (Elkhart) Complete line, including xylophones, etc. (I)

Ludwig & Ludwig (Elkhart) Complete line. (I)

Slingerland Co. (Elkhart) All drums, bell lyra. (I)

W.F.L. Co. (Chicago) Complete line except xylophones, etc. (I)

K. Zildjian. Cymbals (formerly made in Turkey, now made in this country). (I)

G.C. Jenkins, Co. (Decatur, Ill.) (II)

Avedis Zildjian Co. (North Quincy, Mass.) Cymbals. (II)

Harp

Lyon & Healy Co. (Chicago) (I)

Two Intercommunication Systems for Home Use

THIS modern age has brought forth many so-called gadgets and aids for use in the home. Some years ago, houses of the well-to-do were commonly equipped with speaking tubes or a call-board buzzer system, so that those in the house could communicate with one another or their servants without disturbing other persons. The equipment offered now to serve a similar function is a small and relatively inexpensive "intercommunication system."

The two intercommunication systems, which were tested by CR, were for use in the home or a small office. Each system as tested was composed of what was called a master control and one remote station. (The *Bogen* had provision for connecting up to four remote stations.) There were two principal methods of operation possible with either system. If the small expense attendant to having the tubes operating at all times is not a factor, either the *Bogen* or the *Airline* could be operated on a "two-way" basis with either the master or remote station originating a call. If tubes were not left lighted, only the master station could originate a call, and there would be a slight delay in use while the tubes were warming up.

Both systems were considered easy to operate and were found to be quite sensitive. In a quiet room, for instance, the party being called could answer in a normal voice at a distance of

up to 20 feet from the station and be heard. Shock hazard was excessive for both; the *Airline* especially involved extreme danger for use in the kitchen or near a radiator, and particularly in a bathroom. Neither system bore the Underwriters' Laboratories' label.

B. Intermediate

Airline, Model 64—3935 (Montgomery Ward & Co. retail store) \$19.95. Appeared to be same as a system sold by Western Auto stores at a similar price. 105-125 volt, also ac-dc. Brown plastic cabinets. Both master and remote cabinets were 8½ in. high, 6 in. wide, and 3½ in. deep. The unit tested had a high hum level; another unit showed a somewhat pronounced but not annoying hum. Quality of parts and construction only fair. Metal plate on bottom of master-station cabinet which is easily touched, especially if it is desired to move the unit from one position on a desk to another, was at full line voltage and so involved extreme shock hazard. A sheet of *Masonite* or some similar material covering the metal sheet would have greatly reduced the possibility of accidental shock. 1

Bogen Selective Communophone, Model 4A (David Bogen Co., Inc., 663 Broadway, New York 12) Master station, \$47.50 list; remote station, \$11.25 list. For 117-volt operation, ac-dc (transformerless) type (not the most desirable). Consisted of a master control (10½ in. x 6 in. x 7 in.) for use with from 1 to 4 remote stations (each 6 in. x 6 in. x 3 in.). Cabinets were walnut finished plastic. Was well constructed of high quality parts. Intelligibility considered good. Would have received *A-Recommended* rating had it not been for the high leakage current. 3

Storage Batteries

ANY storage battery for use in an automobile should have sufficient current capacity at low temperatures that it will be capable of supplying for the needed length of time (usually a few seconds to several minutes) the 300 to 700 amperes of starting current necessary for cold-weather starting. Its terminals should be clearly and permanently marked. (It is the usual practice to make terminal posts tapered in shape, with the positive terminal 1/16 in. larger in diameter than the negative one for easy identification under adverse conditions.) The number of plates, the capacity of the battery (expressed as time in minutes to a designated terminal voltage) at the 300 ampere discharge rate, and for the 20-hour discharge (e.g., 110 ampere-hours) should be clearly and permanently marked on the case where it can be easily seen after installation. A paper label, used on some batteries, is wholly unsuitable for the purpose of marking rated capacity, number of plates, and other necessary details.

A guaranteed battery is a better buy than one not carrying a guarantee, for with the former, in the event of premature battery failure (due to faulty construction, contaminated make-up water, or misuse) the purchaser receives a pro-rata refund based on the difference between the number of months the battery was guaranteed and the number of months of service it has actually given. The very cheap batteries, which are usually not guaranteed, are produced at the cost of skimping of size and number of plates and quality of materials, and unless the battery is to be used for a temporary or non-vital purpose, purchase of a "cheap" or off-brand or no-name kind, or the purchase of any battery of less than 100-ampere-hour rating is in most cases not to be recommended.

With two exceptions (*Auto-Lite* and *Winter King Standard*) the two samples of each brand indicated good control of uniformity in manufacture in that the two batteries of each type that were tested gave concordant results in each test.

A total of 14 batteries was included in this series of tests — two each of seven different brands. The tests included determinations of the ampere-hour rating, in which the batteries were discharged at an 8-hour rate (3 cycles)

and at a 20-hour rate (2 cycles). For test purposes, the rate of discharge in amperes is determined by dividing the ampere-hour rating of the battery by the number of hours (8 or 20 in this case) during which the battery *should* supply current at the predetermined rate and at the same time maintain its terminal voltage above 5.1 volts. The low temperature cranking ability was also measured. This is indicated by the time in minutes that the battery, cooled to 0°F, will deliver 300 amperes before reaching a terminal voltage of 3.0 volts. The ampere-hour ratings in the listings in all cases are for the 20-hour discharge rate. The first figures in parentheses following the ampere-hour rating were the actual average ampere-hour capacities at the 20-hour rate. The second figures in the parentheses give the time in minutes during which the battery (cooled to 0°F) supplied current at the 300-ampere rate before its voltage dropped to 3 volts (average of the two samples). Life tests were not made, as the time required for a suitable life test is so great that the results would not be available before the battery had gone out of date or the manufacturer had perhaps made changes in design or material.

A. Recommended

Super Allstate, No. 83 (Sears-Roebuck's Cat. No. 28—83F) \$14.25. Rated 110-amp.-hr. (119.1—6.8). 51 plates. Exceptionally good performance on low-temperature discharge test. Rated at 110 amperes and considered best battery of group tested. **2**

Exide Sure-Start 151 (The Electric Storage Battery Co., 1947 Allegheny Ave., Philadelphia 32) \$20.25. Rated 100-amp.-hr. (105.5—5.0). 45 plates. **3**

B. Intermediate

Winter King Standard, Type S1 (Montgomery Ward's Cat. No. 61—6310F) \$9.25. Rated 100-amp.-hr. (105—4.6). 45 plates. **1**

Winter King Heavy Service, Type H1 (Montgomery Ward's Cat. No. 61—6300F) \$12.25. Rated 110-amp.-hr. (112.8—5.2). 51 plates. **2**

Auto-Lite PN-15 (Electric Auto-Lite Co., Toledo, Ohio) \$17.50. Rated 100-amp.-hr. (104.2—4.6). 45 plates. **3**

Willard Heavy Duty HW-1-100 (Willard Storage Battery Co., 246 E. 131 St., Cleveland) \$19.95. Rated 100-amp.-hr. (102.8—4.7). 45 plates. **3**

C. Not Recommended

Allstate Cross Country, No. 46 (Sears-Roebuck's Cat. No. 28—46F) \$10.45. Rated 100-amp.-hr. (103.2—4.3). 45 plates. Capacity at 8-hour discharge rate was lowest of the batteries in the test. **1**

Dishwashing Compounds

ALTHOUGH some people still use bar soap in washing dishes, many have become accustomed to using the more convenient proprietary flakes or powdered products now being marketed. Many of these will be more effective than soap (except in homes where the water supply is very soft and soap works well on that account). The powdered products which have become popular are generally a mixture of a number of ingredients.

A dishwashing compound should meet several requirements: It should have good wetting power in order to wet the fatty film of food which adheres to the surface of the dish even after scraping; it should also be able to emulsify the fatty particles which have to be removed and kept dispersed in the dishwater; it should be able to break up small particles of food which would otherwise tend to form lumps and redeposit on the dishes during washing; it should also have water-softening power. Alkaline compounds should be present to saponify the fatty acids in the soil on the dishes and form soap within the soiling material itself. When the product is to be used for dishwashing by hand, it should have no harmful effect on the skin, which means that the alkaline salts must not be present in too high a proportion. It should not have a harsh or corrosive effect on the articles to be cleaned, which means that no insoluble or gritty material should be present, and alkaline salts should be so chosen that the solution will not be too caustic. Strong alkalis attack aluminum. (Discoloration of aluminum pots and pans is not necessarily an indication of such attack, however.)

After dishes have been washed and rinsed they should not only have a clean appearance, but they should be really clean, in a sanitary sense. If they are free from a cloudy film they will carry far fewer bacteria than when even a light, barely visible coating remains on the dishes. This nearly invisible film is not necessarily a film of grease left from inadequate emulsification, but may be a deposit from the cleaning agent itself, produced when this comes into contact with the rinse water. This means that with reasonable care in washing, probably the critical stage in getting dishes really clean is not so much in the washing as in the rinsing. Compounds present in dishwashing mixtures, whether these contain soap or alkaline salts or both, tend to react with the calcium and magnesium hardness of the rinse water to form a deposit of

Editor's Note:

WHILE the matter of proper formulation of detergents for dishwashing may seem relatively unimportant, it is not so, in fact. This article, prepared by a chemist with special knowledge of detergent products, discusses the factors that underlie the efficient and safe cleansing of dishes and tableware and shows how important it is that the right substances, in the right combinations, should be used to obtain surfaces free from surface film and bacterial deposits. This is a subject of prime importance, not only to the ultimate consumer directly, who uses cleansing detergents for dishwashing in his own home, but to institutional administrators, hotel and restaurant owners, and everyone who serves the consumer in public eating places, where the hazard of transferring diseases through contamination of tableware and dishes is an important one, vital indeed, to public health. Following the discussion of these problems the article concludes with a listing in *Recommended*, *Intermediate*, and *Not-Recommended* groups of the various products that have been analyzed for Consumers' Research for use in dishwashing, both by hand and by machine methods.

insoluble calcium and magnesium compounds.

Thorough cleanliness and sanitation are necessarily emphasized more in public eating places than in the home, because of the danger of disease being spread by dishes not carefully enough sanitized. Experiments in the Army during the last war proved the importance of this point.

The temperatures of washing and rinsing are an important factor in sanitation. In dishpan washing a temperature of 110°F to 115°F is about all that a person's hands can stand comfortably. In mechanical dishwashing the temperature is usually raised to 140°F, even higher in the case of one well-

known home dishwasher. In both types of dishwashing rinsing at 170°F to 180°F has been recommended. This temperature kills most bacteria within a reasonable time of contact. This means that rinsing with water from the hot water faucet is not a good practice, since in most homes the temperature in the hot water boiler seldom exceeds 140°F, and may often be a good deal less, and will be still lower at the faucet. Really hot water from the teakettle is therefore preferable. The temperature, however, is not the only factor in killing bacteria; the dishwashing compounds themselves may contribute some antiseptic action, particularly those containing some of the bactericidal synthetic detergents. Polyphosphates promote sanitation in another way by preventing film formation on the dishes during rinsing. Dishwashing compounds are usually based on mixtures of soap or synthetic detergents with alkaline salts, and more recently with polyphosphates.

Compounds for Dishwashing by Hand

In hard water, products depending on the action of a synthetic detergent or cleansing agent are likely to be more satisfactory than those using soap. Soap, however, can be used, particularly when combined with softening agents, if sufficient excess is added to the dishwater to give a good concentration of soap not decomposed by the hardness of the water. Sulfonated synthetics are claimed to have some antiseptic value, that is, more than soap.

Of the various *polyphosphates* (polyphosphates include *tetrasodium pyrophosphate*, *sodium tripolyphosphate*, *sodium tetrakisphosphate*, *sodium hexametaphosphate*), tripolyphosphate appears to be the most effective, when relative cost is considered. Sodium hexametaphosphate and sodium tetrakisphosphate are also good agents for softening water and for promoting the efficiency of the cleaning action. Sodium hexametaphosphate has been shown to aid in the removal of bacteria. It is quite possible that the other polyphosphates have the same effect. The particular useful property of polyphosphates is their ability to soften the water without causing precipitation, an action termed *sequestration*. An adequate quantity of sequestering agent should be present in the mixture to prevent precipitation at the start of the rinse. When enough is present, the film of cleansing agent may be rinsed away before a hardness film has had a chance to form. (Further discussion of this question will be given under Compounds for Mechanical Dishwashing.) Polyphosphates are useful, too, in helping prevent attack on aluminum by alkaline salts in the dishwashing compounds.

Alkaline salts such as soda ash, trisodium phosphate, and sodium silicate are useful ingredients in dishwashing compounds because they neutralize acid, and they react with fatty acids in the food

residues to form soap. Even though the amount of this soap that is produced may be very small, it does play an important part in the cleaning process. It is particularly effective because of its intimate contact with the soil particles. Because of irritant and drying action on the skin, the amount of alkaline salts should not be too high. Of these salts, sodium silicate has a value over the others in that it helps decrease the attack on aluminum by other strongly alkaline salts such as soda ash. Apparently this is a physical rather than a chemical property; whatever the reason, the practical effect is important.

Some of the proprietary products reported here contain either borax or sodium bicarbonate. These two salts are not sufficiently alkaline to contribute usefully to the cleaning action. However, when mixed with the stronger alkaline salts such as soda ash, they reduce the alkalinity of the solution, giving a milder effect on the skin. Borax precipitates magnesium hardness in water, but this property does not make it of much value from a practical point of view.

Although sodium sulfate and sodium chloride are often considered to be inert in that they have no cleansing properties of their own, they do, as a matter of fact, when combined with synthetic detergents, promote the cleansing ability of the latter. They therefore perform a useful function, when not present in excess. In most of these products, the moisture reported is water of hydration present in some of the crystalline materials of the powder. The exception of course is when the product is in liquid form, in which case a quite high proportion of water is normally present. An exception is *Glim*, which contains only a few percent of water, and consists largely of a different type of synthetic detergent from the usual; the active ingredient of *Glim* is a liquid termed a *non-ionic*, which is highly effective and is neutral in solution, so that it lacks the caustic action of alkalies.

Compounds for Mechanical Dishwashing

The products used for mechanical washing can safely be much more strongly alkaline than those used for dishwashing by hand. In the past, indeed, many of them were mixtures of alkaline salts and nothing more. The same cleansing products used in restaurant and hotel dishwashers are suitable for home-type mechanical dishwashers. In either type, the cleansing process is intended to take place within a short space of time.

As pointed out before, alkaline salts clean because of their reaction with fatty materials in the food residue left on dishes after scraping. The newer dishwashing materials combine polyphosphates with the alkaline salts to give a much better effect during both washing and rinsing. Soap is not ordi-

narily present in compounds for mechanical dishwashing, for soap has the disadvantage of giving a cushion of suds which cuts down the mechanical efficiency of the machine in operation. Experiments carried out with soap in comparison with a number of typical proprietary products showed that glass tumblers and plates washed in domestic-type dishwashers retained a fairly heavy residual film when washed with soap, whereas there was practically no film when they were washed with mixtures based on alkaline salts as polyphosphates. The film, as already mentioned, is objectionable both from a sanitary point of view (because the film accumulates bacteria), and, of course, as to appearance.

Because of the detrimental effect of suds in the machine, only a very small proportion, no more than 1 to 3 percent, of synthetic detergent should be present. The presence of this small amount of detergent is desirable, for it adds greatly to the wetting power of the solution and also promotes completeness of rinsing.

In order to study the effect of polyphosphates, one experimenter washed thirty china dishes varying from moderately priced to rather expensive ones, with both overglazed and underglazed patterns. Two similar lots of these were soiled experimentally. One was washed with a product consisting largely of trisodium phosphate, the other with *Calgonite*. After five washings the dishes cleansed with trisodium phosphate had accumulated a noticeable film of grease, while similar dishes washed with *Calgonite* appeared to be perfectly clean. Since no effect was reported on the patterns of the china, we conclude that these were not injured by either treatment. One hundred washings of an aluminum pan with a commercial product based on trisodium phosphate resulted in a loss of 30 percent of its original weight and in corrosive etching of the aluminum. A similar aluminum pan washed one hundred times in *Calgonite* showed a loss of 6 percent in weight, but it still looked new. (A 6% loss is of no particular consequence when interpreted in terms of practical conditions.)

In a recent court decision resulting from a suit in which the Hall Laboratories (makers of *Calgon* and *Calgonite*) sued the Economics Laboratories (makers of *Super Soilax*) for infringement, the patent claims of the makers of *Calgon* and *Calgonite* that were sued on were held invalid. This means that general manufacture and sale of dishwashing compounds containing sodium hexametaphosphate, and similar in general nature to *Calgonite*, are now permissible.

A study of the sanitary quality of dishes artificially soiled showed that washing in water alone left the dishes with a high bacterial count, while washing with trisodium phosphate gave a much lower count, and washing with a proprietary product containing 40% polyphosphate gave a negli-

ble bacterial count. The conclusion was reached, with apparently good reason, that a close relation exists between freedom from visible soil or film on dishes and cleanliness in the bacteriological sense.

With reference to film formation, dishes washed ten times with each of the alkaline salts alone — soda ash, sodium silicate, and trisodium phosphate — showed a fairly thick film, while tetrasodium pyrophosphate left only a thin film and sodium tetraphosphate left almost no film. The tetraphosphate was therefore the better of these two polyphosphates in preventing film formation on washed dishes.

In an extensive study of the problem, 36 compounds — including both commercially available products and experimental formulas — were tested by use of artificial soil on glass. Results of the washing tests were correlated with the analyses of the various materials. Based on this work, proposed specifications were developed suitable for an effective dishwashing compound. As drawn up, these specifications included a minimum content of 23 percent of phosphates, 16 percent of silicate, and no more than 48 percent of sodium carbonate, all on an anhydrous basis. (Polyphosphates apparently were not studied in their relation to the content of alkaline salts.) The importance of sodium silicate in preventing corrosion of aluminum was confirmed. Approximately these requirements were employed by the Navy Department in its specifications for a dishwashing detergent.

As a general conclusion from the experimental work which has been carried out on materials for mechanical dishwashing, mixtures containing relatively high proportions of polyphosphate and sodium silicate are to be preferred. These same ingredients are also very valuable in compounds for hand dishwashing, but the proportion of silicate and of other alkaline salts should not be as high. In products used for washing dishes by hand, a high proportion of synthetic detergent is desirable (or of soap, if properly combined with other ingredients).

Ratings are cr48.

For Hand Dishwashing

A. Recommended

- Breeze* (Lever Bros., Cambridge, Mass.) 30% sulfonated detergent, 1% sodium hexametaphosphate, 62% sodium sulfate, 6% sodium chloride, 1% water.
- Dirt Buster* (Cannon Chemical Co., Everett, Mass.) 36% sulfated detergent, 64% sodium sulfate.
- Dreft* (Procter & Gamble Co., Inc., Ivorydale, Cincinnati) 23% sulfated detergent, 77% sodium sulfate.
- Glim* (General Aniline & Film Corp.) 4-oz. bottle. Liquid. 95% synthetic detergent, 5% water.
- Oxydol* (Procter & Gamble Co., Inc.) 56% soap, 6% tspp., 20% soda ash and sodium silicate, 18% moisture and inert matter.

Rinso (Lever Bros.) 56% soap, 6% tspp., 18% soda ash and sodium silicate, 20% moisture and inert matter.

Shur Wonder-Wash (Shur-Gloss Mfg. Co., Chicago) 38% sulfated detergent, 5% tspp., 4% sodium hexametaphosphate, 53% sodium sulfate.

Super Suds (Colgate-Palmolive-Peet Co., Jersey City, N.J.) 56% soap, 6% tspp., 18% soda ash and sodium silicate, 20% moisture and inert matter.

Swirl (H. J. Heinz Co., Pittsburgh) 40% sulfonated detergent, 3% sodium hexametaphosphate, 57% sodium sulfate.

Tide (Procter & Gamble Co., Inc.) 25% sulfated detergent, 52% tspp., 18% sodium sulfate, and water.

Vel (Colgate-Palmolive-Peet Co.) 33% sulfated monoglyceride, 2% tspp., 1% sodium bicarbonate, 64% sodium sulfate.

B. Intermediate

Chat (General Aniline & Film Corp.) Liquid. 15% potassium soap, 2% sulfonated detergent, 1% tspp., 2% tsp., 1% sodium silicate, 79% water.

Dus (Procter & Gamble Co., Inc.) 74% soap, 16% soda ash and sodium silicate, 10% moisture and inert matter.

Magic Washer (Iowa Soap Co., Burlington, Iowa) 60% soap, 40% tsp.

Maid Easy (Maid Easy Cleansing Products Corp., Mt. Vernon, N.Y.) 12% sulfonated detergent, 3% sodium carbonate, 15% borax, 56% sodium chloride, 14% sodium sulfate.

Perk Granulated Soap (Armour & Co., Chicago) 71% soap, 14% sodium bicarbonate, 15% tsp.

Uncle Hiram's Dus-All (New Method Varnish Co., Elmira, N.Y.) Liquid. 13% potassium soap, 4% potassium carbonate, 1% tsp., 1% sodium sulfate, 81% water.

C. Not Recommended

Leisure (Leisure Soap Co., Los Angeles) 5% sulfonated synthetic, 5% tsp., 86% sodium sulfate, 4% water.

O.D. Wonder Wash (O.D. Chemical Corp., N.Y.C.) 12% sulfated detergent, 9% tspp., 26% sodium carbonate, 34% sodium bicarbonate, 1% sodium chloride, 2% sodium sulfate, 13% moisture, and the balance sand.

Softee (1946 Du-Rite Products Co., Inc.) 5% soap, 72% sodium sesquicarbonate, 4% tsp., 12% sodium chloride, 1% sodium sulfate, 1% silicate, 5% water of hydration.

Solventol House Cleaner (Solventol Chemical Products, Inc., Detroit) 1% soap, 65% tsp., 34% sodium sesquicarbonate, hydrated.

For Machine Dishwashing

A. Recommended

Calgonite (Calgon, Inc., Pittsburgh) 40% sodium hexametaphosphate, 40% sodium silicate, pentahydrate, 15% tsp., dodecahydrate, 5% sodium hydroxide.

Cudahy's Glissenite (Cudahy Packing Co., Chicago) 16% sodium hexametaphosphate, 34% sodium bicarbonate, 20% sodium carbonate, 26% sodium silicate, pentahydrate, 4% moisture.

Drayndri (Drayndri, Inc., N.Y.C.) 36% tspp., 36% tsp., fully hydrated, 19% sodium silicate, pentahydrate, 9% soda ash.

Goldbrite No. 1 (Globe Chemical Co., Cincinnati) Sold in 100-lb. barrels. 1% sulfonated detergent, 17% tspp., 47% sodium carbonate, 27% sodium metasilicate, pentahydrate, 1% sodium chloride, 7% water.

H.W. Dishwashing Compound (C. B. Dolge Co., Westport, Conn.) 20% tspp., 73% sodium metasilicate, pentahydrate, 7% sodium carbonate.

Muro Dishwashing Compound (North Coast Chemical & Soap Works, Seattle) Sold in 40-lb. pails. 1% sulfonated detergent, 14% sodium hexametaphosphate, 16% tsp., 29% sodium carbonate, 35% sodium silicate, pentahydrate, 5% water of hydration.

Super Soilax (Economics Laboratory, Inc., St. Paul) 25% sodium hexametaphosphate, 40% sodium silicate, 35% soda ash.

Tetrasol (Fisher Products Corp., Washington, D.C.) Sold in 325-lb. drums. 1% soapless detergent (type not determined), 10% tspp., 52% sodium metasilicate, pentahydrate, 30% tsp., dodecahydrate, 7% soda ash.

B. Intermediate

Kleenwell Dishwashing Compound (Chicago Sanitary Products Co., Chicago) 100% sodium metasilicate, pentahydrate.

Mecho-Wash, No. 32 (Tykor Products, Inc., N.Y.C.) Sold in 350-lb. drums. 1% sulfated detergent, 20% tsp., dodecahydrate, 24% sodium silicate, 17% sodium carbonate, 28% sodium bicarbonate, 1% sodium chloride, 9% water of hydration of carbonate and silicate.

Socil (Rumford Chemical Works, Rumford, R.I.) 3% sulfated organic detergent, 12% tspp., 36% tsp. partially hydrated, 24% sodium carbonate, 25% sodium bicarbonate.

C. Not Recommended

Dishwashing Powder 739-C (Nobs Chemical Co., Los Angeles) 1% sulfonated detergent, 46% tsp., 6% sodium silicate, pentahydrate, 3% sodium carbonate, 5% sodium sulfate, 39% water of hydration.

Emralite (Fisher Products Corp.) Sold in bulk. 1% soapless detergent (type not determined), 1% tspp., 10% sodium metasilicate, pentahydrate, 76% tsp., dodecahydrate, 12% soda ash.

Keystone Dish Washer (Swift & Co.) 47% sodium carbonate, 39% sodium bicarbonate, 14% moisture.

MaFos Briquet (The Mathieson Alkali Works, N.Y.C.) 20% tsp., anhydrous, 80% sodium carbonate, anhydrous.

Ravo (H. L. Shaw & Sons, Inc., Portsmouth, N.H.) 1% sulfated detergent, 5% tsp., 9% sodium carbonate, 1% silicate, 68% sodium sulfate, 8% sodium chloride, 8% water of hydration.

Sutho Suds (Sutho Suds, Inc., Indianapolis) 3% sulfonated detergent, 65% sodium bicarbonate, 7% sodium carbonate, 5% sodium silicate, pentahydrate, 3% tsp., 16% sodium chloride, 1% water of hydration.

Four Table-Model Television Receivers

THE television receiver to buy in today's market depends upon many factors. If the listener is located within 20 or 30 "air-line" miles of a station or group of stations, he probably does not need to be greatly concerned about the sensitivity of the television channel of his receiver. If he lives beyond this distance, he may not experience good reception without a sensitive set and an exceptionally good antenna installation.

An important element of design to which manufacturers have given little consideration is quality of the sound output. Because the demand for TV receivers has been very brisk and the supply far behind, manufacturers have dropped right into the groove long occupied by the manufacturers of radio sets, for they are in most cases supplying receivers which are, owing to design characteristics of certain circuit elements, completely incapable of reproducing sound with the fidelity and naturalness which are possible with the fine FM transmission that television stations can and do send out.

At the present time, this has probably appeared relatively unimportant, even to many who have bought television receivers, because most of the programs consist of coverage of sports and games and other matters largely involving the spoken word, or music of low quality where high-grade reproduction of sound may have seemed unnecessary or unimportant. However, as broadcasting station management and program material are broadened in scope and improved in quality and refinement, there will be an increasing need for receivers capable of high-fidelity reproduction, and most of the sets being produced today will seem unsatisfactory and hardly worth keeping for those who have a good ear for music and like to hear sound well and clearly reproduced.

For these reasons, a critical attitude is fully warranted with respect to the sound output of television receivers, especially those of the console type. (One expects less of any and all table models because their reproduction is limited by the size of the cabinet housing and the small

speakers, just as is the case with table model radios. However, the table model television sets give much poorer reproduction than is necessary, even when these factors are considered.)

No standards have yet been set which are applicable to the laboratory testing of television receivers; indeed the art of manufacture is at the present moment far ahead of the technique of testing and comparison. Even the instruments needed are still only in the development stage and unavailable for general purchase. (In this respect, the television industry finds itself in much the same position as the radio industry was twenty to twenty-five years ago when set manufacture was on an empirical basis far in advance of the means of test and instrumentation needed to measure the performance and quality of receivers.) For this reason it is possible in some cases only to pass expert judgment on some of the technical aspects of the receivers reported on.

All receivers listed were for operation on 110 volts 60 cycles a.c.

A. Recommended

Philco Television Receiver, Model 48-700 (Philco Corp., Tioga & C Sts., Philadelphia 34) \$199.50 plus installation and service charge. 25 tubes used including 7-in. picture tube. Picture size, 5 $\frac{1}{4}$ in. x 4 $\frac{3}{4}$ in. Loud-speaker, 6 in. Cabinet size, 14 in. high, 21 in. wide, and 19 in. deep. Picture quality considered excellent (intermediate frequency fidelity is up to 4 mc. — which is good), although there was some lack of brilliance, which has been a characteristic of sets using the 7-in. picture tube. Picture intensity was completely satisfactory for nighttime operation, but would call for a subdued light level in the room in daytime operation. The synchronizing circuits which are used to keep the picture "locked-in" and steady were unusually stable. *Video sensitivity*, or what might be considered a measure of the ability of the receiver to pick up a weak television signal and present it satisfactorily, considered ample. (Used one tuned radio frequency amplifier stage.) Audio quality comparable to that of a good table-model radio. Distortion was low and frequency response extended to 8200 cycles (at which output was 12 db. down). Sensitivity on audio channel poor compared with present good FM receivers. (250 microvolts required for quieting or practical elimination of noise background.) Sensitivity adequate, how-

ever, for proper sound reception with the weakest picture signals that could be satisfactorily received. Two antennas with separate transmission lines to the receiver — one covering channels 1 to 6 and the other covering channels 7 to 13 — needed for complete coverage of television bands (both can be mounted on the same pole). Receiver had a satisfactory arrangement of station selector, background, contrast, focus, and on-off-volume controls, located on front of panel. The switch method of channel selection used in this receiver is considered desirable since the layman is not required to go through the rather technical procedure of tuning with a dial. (Dial tuning is best for radio receivers, but more difficult to handle for the inexperienced user of television receivers.) The switch arrangement was made possible in this receiver by the use of automatic frequency control which also functioned automatically to keep distortion in the audio signal at a minimum; this was considered of definite value. There was leakage current present, but the amount was not excessive. This leakage current, however, was present at the metal station-selector knob (considered highly undesirable). 1

RCA Television Receiver, Model 8TS30 (RCA, Camden, N.J.) \$375 plus \$75 installation. 30 tubes used including 10-in. picture tube. Picture size, 6 $\frac{3}{4}$ in. x 8 $\frac{1}{2}$ in. Elliptically-shaped loud-speaker, 5 in. x 7 in. Cabinet size, 15 in. high, 25 $\frac{1}{2}$ in. wide, and 19 in. deep. Picture quality, excellent (best of sets tested). (Observations indicated that intermediate frequency fidelity was up to 4 mc.—good.) Synchronizing circuits employ the RCA *Synchrolock* system for maintaining better synchronism in the presence of interfering noises; this is a definite advantage. Video sensitivity considered ample. Audio section of sound channel produced high distortion above 0.3 watts output. (16% at 1 watt.) A little later on, when audio standards for television sets have become higher, as they should be, a set with this audio performance could not receive an A rating. Frequency response extended to 8200 cycles, at which output was 10 db. down. (Adequate range considering small speaker used.) Sound channel sensitivity unusually good for a television receiver. It is felt that there are too many tuning controls on the front panel. Both synchronizing controls could be placed at the rear, especially in view of the *Synchrolock* which provides a synchronizing stability greater than that on other receivers whose makers have found it satisfactory to place this control at the back of the receiver. (Excess controls may be confusing to the layman, since wrong adjust-

ment of one control may make the others inoperative.) Vernier tuning for maximum sound output was difficult to adjust, even for a technician. Leakage current present but not excessive. 3

C. Not Recommended

Emerson Television Receiver, Model 571 (Emerson Radio & Phonograph Corp., 118 8th Ave., N.Y.C.) \$299.50. 28 tubes used including the 10-in. picture tube. Picture size, 6 $\frac{3}{4}$ in. x 8 $\frac{1}{2}$ in. Picture quality varied from very poor to fairly satisfactory; sound output was almost completely destroyed at times by cross modulation of the picture signal into the sound channel. Apparently, the instability was caused by poor design. Picture fidelity near full amount obtainable. (Frequency response probably close to 4 megacycle maximum.) Although the circuits used in this receiver were quite similar to those in the RCA 8TS30, component parts were of apparent poorer quality and the stability of the synchronizing circuits was definitely unsatisfactory in spite of the fact that the RCA *Synchrolock* or "eye witness" type of synchronizing circuits were used. If properly aligned, video sensitivity would probably be same as on RCA set but there is some question whether the Emerson receiver would maintain stable alignment. Quieting sensitivity of sound channel measured at about 250 microvolts, relatively insensitive, but adequate for proper sound reception with the weakest picture signals that could be satisfactorily received. Sound output poor, with excessive distortion above 0.3 watt output. Speaker in this receiver was mounted at an undesirable position, on the side of the cabinet, which gave the sound output a muffled and remote quality. Leakage current excessive with chassis at full line voltage; the ground terminal on the antenna terminal board, however, was the only accessible point at which this voltage appeared (front and rear control knob shafts were insulated). 2

C. Not Recommended (Tentative)

Motorola Television Receiver, Model VT-71 (Motorola Inc., Chicago 51) \$189.95. The original receiver supplied for test had considerable vertical "jitter" which created considerable eyestrain in the observer. In addition, there was a noticeable lack of detail in the picture. Set was returned to the manufacturer for correction; upon its return to the laboratory, it still exhibited the same defects. This receiver is rated tentatively C. *Not Recommended*. (Further tests on this make are in progress at this time.) 1

Binders for CR's Bulletins

BLACK FIBERBOARD binders, suitably imprinted for Consumers' Research material, are available to subscribers at cost plus a small handling and mailing charge. These binders use *Acco*-type metal fasteners for se-

curing the BULLETINS. The price is 45c postpaid (Canada, 55c). This binder can be used only with BULLETINS that are drilled or punched (2 holes needed). This is the cheaper of the binders available from CR for its BULLETINS (see June 1948 BULLETIN, page 24).

Motor Oils—SAE 10, 10W, 10-10W and 20, 20W, 20-20W

THE motor oils reported upon here were purchased for the most part by subscribers, the only exceptions being the Far West (FW) oils. The Far West oils were bought and tested by a western state government and were rated by Consumers' Research on the basis of the state government's analyses. All ratings are based on viscosity index (should be high), carbon residue (should be below certain specified limits), and pour point (of particular importance in winter oils). Oils which were misbranded as to SAE number were rated down one grade on that account since it is important that the motorist should receive the oil he asks for.

For normal driving, the regular standard-priced (non-premium) petroleum lubricating oils without added detergents or other new materials will not only be satisfactory for average consumers' use but will be safer than "additive oils" (which are best adapted to the needs of fleet operators and others able to give special engineering supervision to the use of oils). From the consumer's standpoint, it would be desirable if the refiners would give up their adding of needless complication to an already complex problem and omit the additives (which have been introduced not to make oil better but as means of providing an "extra something" usable in the advertising and selling of one brand as against others). On the problems of "additive oils," see August 1946 BULLETIN, page 13, and September 1946 BULLETIN, pages 21-24.

A large proportion of the oils tested in this study were found to contain additives.

Oils are graded by viscosity, identified by SAE numbers. These range by steps of ten from SAE 10 to the most viscous that one would ever expect to use in a passenger car, SAE 40. In addition, there are 10W and 20W oils (not SAE numbers). (A 5W is soon to be introduced.) These are oils which have the special property of lowered pour point, gained by chemical treatment to permit easier starting in cold weather. (20-20W oils are intended to meet the specifications of both SAE 20 oil and 20W.)

The regions where samples were purchased are indicated by letters in parentheses: (E), samples bought in New York, Pennsylvania, New Jersey, Delaware, Connecticut, Massachusetts, Maine, New Hampshire, Vermont, Rhode Island; (SE), Arkansas, Louisiana, Mississippi, Tennessee, Kentucky, West Virginia, Maryland, Virginia, North Carolina, South Carolina, Georgia, Alabama, Florida; (MW), Minnesota, Iowa, Missouri, Wisconsin, Illinois, Indiana, Michigan, Ohio; (W), Montana, Wyoming, Colorado, Kansas, Nebraska, North Dakota, South Dakota; (FW), Nevada, Idaho, and Utah.

Ratings are cr48.

A. Recommended

SAE 10

Derby Vitalized (Derby Oil Co.) (W)
Dixie Vim Premium (Distributed by Southern Oil Stores, Inc.) (SE)
Esso No. 1 (Standard Oil Co. of Kentucky) (SE)
Quaker State (Quaker State Oil Refining Co.) (SE)
R.P.M. (Standard Oil Co.) (SE)
Texaco (The Texas Co.) (FW)

SAE 10W

Amoco (American Oil Co.) (SE)
Iso-Vis (Standard Oil Co. of Indiana) (MW) (W)
Phillips 66 (Phillips Petroleum Co.) (MW)
Quaker State (Quaker State Oil Refining Co.) (MW)
Sinclair Opaline (Sinclair Refining Co., Inc.) (SE) (W)
Sinclair Pennsylvania (Sinclair Refining Co., Inc.) (E) (SE)
Skelly Tagoline (Skelly Oil Co.) (W)
Sunoco Dynalube (Sun Oil Co.) (E)

SAE 10-10W

Atlantic A (Atlantic Refining Co.) (E)
Champlin (Champlin Refining Co.) (W)
Golden Shell (Shell Oil Co., Inc.) (MW)
Gulflube (Gulf Oil Corp.) (SE)
Gulfpride (Gulf Oil Corp.) (E) (W)
Havoline (The Texas Co.) (E) (SE) (W)
Kendall (Kendall Refining Co.) (SE) (W)
Mobiloil Arctic Special (Socony Vacuum Oil Co.) (E) (W)
Pennzoil (The Pennzoil Co.) (E) (MW) (W)
Texaco Insulated (The Texas Co.) (E) (MW) (W)
Valvoline (Valvoline Oil Co.) (W)
Veedol (Tide Water Assoc. Oil Co.) (E) (W)
Wards Vitalized (Distributed by Montgomery Ward & Co.) (E)
Wolf's Head (Wolf's Head Oil Ref. Co.) (SE)

SAE 20

Bureau Premium (Distributed by United Cooperative, Inc.) (E)
Derby Vitalized (Derby Oil Co.) (W)
Dixie Vim Premium (Distributed by Southern Oil Stores, Inc.) (SE)
Esso No. 3 (Standard Oil Co. of Kentucky) (SE)
R.P.M. (Standard Oil Co.) (SE)
Skelly (Skelly Oil Co.) (W)
Sunoco Dynalube (Sun Oil Co.) (E)

SAE 20W

Champlin (Champlin Refining Co.) (W)
Essolube (Standard Oil Co. of Penna. and N. J.) (E)
Iso-Vis (Standard Oil Co. of Indiana) (W)
Panhard (N. Y. Lubricating Oil Co.) (E)
Phillips 66 (Phillips Petroleum Co.) (W)

SAE 20-20W

Amoco (American Oil Co.) (E)
Atlantic A (Atlantic Refining Co.) (E)
Gulflube (Gulf Oil Corp.) (SE)
Havoline (The Texas Co.) (E) (SE) (W)
Kendall (Kendall Refining Co.) (E) (W)
Mobiloil (Socony Vacuum Oil Co.) (E) (W)
Shell X-100 (Shell Oil Co., Inc.) (E)
Sinclair Opaline (Sinclair Refining Co., Inc.) (E) (SE) (W)
Texaco Insulated (The Texas Co.) (E) (W)
Valvoline (Valvoline Oil Co.) (W)

B. Intermediate**SAE 10**

Macmillan Ring Free (Macmillan Petroleum Corp.) (FW) (W)
Richfield Penn (Richfield Oil Co.) (FW)
R.P.M. (Standard Oil Co.) (FW)

SAE 10-10W

Mobiloil (General Petroleum Corp.) (FW)
Phillips 66 (Phillips Petroleum Co.) (W)
Shell X-100 (Shell Oil Co.) (E)

SAE 20

Havoline (The Texas Co.) (FW)
Macmillan Ring Free (Macmillan Petroleum Corp.) (SE) (W)
Motoreze (Union Oil Co.) (FW)
Pennzoil (The Pennzoil Co.) (W)
Pure Penn (Western Auto Supply Co.) (FW)
Quaker State (Quaker State Oil Refining Co.) (SE) (FW)
R.P.M. (Standard Oil Co.) (FW)
Shell Penn (Shell Oil Co.) (FW)
Triton (Union Oil Co.) (FW)
Wolf's Head (Wolf's Head Oil Refining Co.) (SE)
Zerolene (Standard Oil Co.) (FW)

SAE 20W

Quaker State (Quaker State Oil Refining Co.) (E)

SAE 20-20W

Amoco (American Oil Co.) (SE)
Atlantic A (Atlantic Refining Co.) (SE)
Gulfpriide (Gulf Oil Corp.) (E) (W)
Kendall (Kendall Refining Co.) (SE)
Mobiloil (General Petroleum Corp.) (FW)
Pennzoil (The Pennzoil Co.) (E) (SE)
Sinclair Pennsylvania (Sinclair Refining Co., Inc.) (SE)
Veedol (Tide Water Assoc. Oil Co.) (E) (W)
Wards Vitalized (Distributed by Montgomery Ward & Co.) (E)

C. Not Recommended**SAE 10W**

Amoco (American Oil Co.) (E)
Panhard (N. Y. Lubricating Co.) (E)
Quaker State (Quaker State Oil Ref. Co.) (E)

SAE 10-10W

Bureau Premium (Distributed by United Cooperatives Inc.) (E)

SAE 20

Cities Service (Cities Service Oil Co.) (SE)
Richfield Penn (Richfield Oil Co.) (FW)
Sunoco (The Sun Oil Co.) (SE)
Veedol (Tide Water Assoc. Oil Co.) (FW)

Camera-Testing Service

CONSUMERS' RESEARCH has made arrangements with a highly qualified expert to test camera lenses, shutters, and range-finders for subscribers. Service of this sort is perhaps particularly important at this time to the purchaser of a new or used camera when the sum

to be spent on the purchase is a sizable one. As CR's recent tests have shown, factory inspection of new cameras is notably lax, with the result that the purchaser of a new camera has no assurance that the camera which he receives from his dealer will be in acceptable working

order, even though in general the optical and engineering design may be good. Brand names of cameras or of lenses of either American or foreign manufacturers are even less dependable criteria of quality than they were in pre-war days.

In purchasing a used camera, the buyer assumes the risk that it may have been damaged by the previous owner, and there is the very real possibility that the camera was originally of poor quality or defective in some respect. Few if any dealers have the facilities or can afford to take the time to check a camera; the recommendation of even the most reliable dealer therefore must be considered only an opinion, and often not well-informed opinion at that. The fact that both new and used cameras are now grossly overpriced makes it rather more important than heretofore that a purchaser protect his investment, if a large one, by making certain that the camera he has selected is capable of giving proper performance.

Lenses will be tested in the camera, because it is the performance of the lens in the camera which is important to the photographer rather than the performance of which it may be capable on the optical bench. After the focusing scale is checked and calibrated, lens performance will be tested at full aperture and at other apertures. The test will consist of determination of the resolving power (in lines per millimeter) at the optical axis and at each 5 degrees of angular distance from the axis. These resolving powers will be reported, and the report will be accompanied by photographs made with the camera. The lens quality will be reported qualitatively also as *excellent, good, mediocre, or poor*.

Measurements of effective shutter speeds, for as many as 10 settings, for either interlens or focal-plane shutters, will be made at full aperture of the lens. (Effective speed, with an interlens shutter, depends to some extent upon aperture.)

Range-finders, either coupled or separate, will be checked and calibrated.

The charges will be as follows, with a minimum charge of \$4.50:

1. Checking and calibration of focusing scale, and test of resolving power of the lens, \$8.

2. Measurement of shutter speeds, \$3.

3. Checking and calibration of range-finder, \$2.

4. All shipping charges are extra. A charge (presently estimated and charged as \$1) will be made to cover insurance on the camera during the time it is in possession of the laboratory.

Note the following carefully before shipping any camera for test:

In CR's opinion, cameras costing less than \$50, unless the camera was believed to have been purchased second hand at an unusually low bargain price, do not represent a large enough investment to warrant cost of testing, and should not ordinarily be submitted.

All responsibility for damage in transit must be borne by the shipper. Cameras will be handled with all possible care during tests, but responsibility for damage cannot be assumed by CR or by the testing expert. Defects that may be present in shutters or lenses will not be corrected, nor will adjustments of any kind be made. Cameras will be returned as quickly as possible, but no guaranty of time of return can be given unless special arrangements have been made previous to shipment. Persons purchasing cameras on a 10-day trial basis would be well advised to reserve in advance the time for testing their camera before finally purchasing the equipment, in order that tests could be completed within the trial period. *Do not ship Leica or other cameras not having either a hinged or removable back, for shutter tests.* Lens tests can, however, be made on these cameras. For the present, telephoto or wide-angle lenses will not be tested. Cameras using plates or cut film must be accompanied by 3 plate or cut-film holders, if lens tests are desired. Cameras should be carefully packed for shipment and packages should be clearly and very legibly marked with owner's name and return address. Accompany shipment by letter giving make and model of camera, type and serial number of lens and shutter, return address, and specific instructions as to tests desired. *Payment of test fee, insurance charge, and return shipping charges must also be included with the letter.* Cameras should be carefully packed for shipment and addressed: *Consumers' Research, Inc., Washington, New Jersey. Camera (or lens) for test.*

Two Audio Amplifiers, an AM-FM Phonograph Combination, a High-Fidelity Speaker System, and Circuit for Clarkstan Pickup

Two Audio Amplifiers

A. Recommended

Altec Lansing, Model A-323B Audio Amplifier (Altec Lansing Corp., Hollywood) \$133. Over-all size, 8 in. high, 12 in. wide, 8 in. deep. For use on 110 to 125 volts, 60 cycles a.c. Rated at 15 watts power output. Output impedances of 2.5-5, 8-12, 16-24 ohms (considered adequate range for usual consumer needs). 6 tubes used including two 6L6 "beam power" pentodes for power output and a 5U4 as rectifier. Separate controls for bass, treble, and volume. Two inputs provided — "Radio input" suitable for use with tuner or crystal pickup and "phono input" which had sufficient gain for use with GE or similar magnetic pickups and provided adequate bass. Amplifier was well constructed, using good quality parts, including an excellent output transformer (important). Frequency response (electrical) 20 to 20,000 cycles within 1 db. Power output 21.5 watts at 1000 cycles and held at 18 watts or more between 25 and 15,000 cycles, measured at 2.5 percent distortion, a direct indication of the excellent quality of the output transformer. Hum level not objectionable (60 db. below 15 watts with maximum bass boost). Radio channel required 0.4 volts and phono channel 0.02 volts for 15 watts output. In listening test gave good quality reproduction of phonograph music, but with full bass boost there was some evidence of bass "boom" and "overhang," which might be quite objectionable to some listeners. This was possibly caused partly by the type of bass control used, which eliminates negative feedback at low frequencies. Harmonic distortion was less than 1 percent for outputs under 14 watts. This amplifier is considered definitely superior to the *Thordarson T-31W10-A* but is not to be considered at all comparable to the *Brook* (see April and May 1947 Bulletins). 3

B. Intermediate

Thordarson Tru-Fidelity Amplifier, Model No. T-31W10-A (Thordarson Electric Mfg. Division, Maguire Industries, Inc., Chicago) \$64.58. Two samples tested. Over-all size, including tubes, 8 in. high, 14 in. wide, 8 in. deep. For use on 115 volts, 60 cycles a.c. Rated power consumption, 115 watts. Used two 6B4G power triodes (desirable) in push-pull output; pentodes for input amplifiers (for best amplifiers, CR recommends low-gain triodes throughout). Input for high level radio, or crystal pickup; low level for microphone (low level input required 0.01 volts input, high level input required 0.25 volts, for 10 watts output). Quality of parts, average. Ease of servicing, good. Frequency response (electrical): within 2 db. from 20 to 15,000 cycles in chassis No. 1 at neutral position of tone controls and 30 to 20,000 within 2 db. in chassis No. 2—both very good. Power

output, adequate. Hum not objectionable using tubes supplied. Bass and treble tone controls had good action and supplied sufficient boost and attenuation. Distortion in both samples was high in low frequency range at low power levels (apparently caused by large current unbalance in plate circuits of output tubes). Use of bass boost introduced a "muffled" sound (possibly distortion caused by inductive type of tone control). For these reasons the amplifier is not recommended for use by a person who likes substantial bass content in music or whose loud-speaker, as do most loud-speakers, requires large input to produce good response for low tones. Would have received an *A-Recommended* rating if individual bias resistors for output tubes had been used. 2

An AM-FM Phonograph Combination

B. Intermediate

Westinghouse, Model H-166 (Westinghouse Electric Corp., Home Radio Division, Sunbury, Pa.) \$379.95. Large console with mahogany finish, a.c. only. An 11-tube set (including rectifier) using superheterodyne circuits for AM and FM. 12-in. electro-dynamic speaker. Quality of parts and workmanship, good. Selectivity, good. Sensitivity, excellent on AM and FM. Spurious responses noticed. Power output at 400 cycles with 5% distortion, 12 watts (good). Over-all tonal range for FM and phonograph sections (acoustic), 70 to 6200 cycles; some output at 9000-10,000 cycles. (Exceptional for commercial phonograph equipment, not sufficient for first-class FM reception.) AM electrical response not adequate for high fidelity. (An unimportant fault, perhaps, with present-day AM broadcasting.) Used a single tone control, of an undesirable type, for both bass and treble. The tone quality suffered somewhat due to considerable resonance in the side walls of the console, giving "boominess" which distorted the low-frequency reproduction. A degree of shrillness was also noticed, quite possibly caused by a relative rise in speaker output in the 2500-cycle region. Record changer capacity, twelve 10-in. or ten 12-in. or ten of mixed sizes, at one loading. Phonograph section equipped with the very good GE VR cartridge and GE's preamplifier (very good if modified by simple circuit changes discussed in August 1948 Bulletin). Needle pressure, approximately 1 oz. As often happens with this type of receiver, record space provided involved sacrificing some of the speaker baffling area. For this reason, the speaker could operate well only at a moderate output level. 3

High-Fidelity Speaker System

A. Recommended

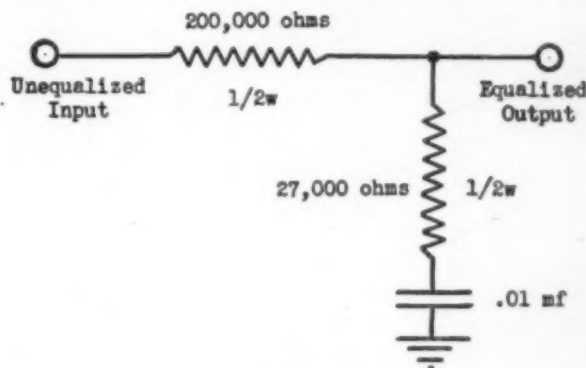
Klipsch Speaker System, Model 1A (Brociner Electronics

Laboratory, 1546 Second Ave., New York 28) \$426. A large corner-location speaker using a combination "woofer" (for low frequencies from 30 cycles up to about 500) driven by a conventional 15-inch cone speaker unit, and a "tweeter" (for high frequencies from 500 to 15,000 cycles per second) with a *Western Electric 713 A* or *Stephens P 15* as driver. The "woofer," by utilizing the two walls of the room extending from a corner in which the unit is placed, gives remarkably realistic performance in the important 30 to 500 cycle range with a very minimum of distortion. The "tweeter" section has a 90° dispersion angle matching that of the "woofer" section. The combination gives over-all reproduction which CR believes has not been approached by any other available speaker or speaker system. A crossover network is necessary, and is supplied. AA3

Frequency Compensating Network for Clarkstan Wide-Range Pickup

IN the listing of the *Clarkstan Wide-Range Pickup* in CR's BULLETIN for May 1948, it was stated that a simple network would be

published later for those users who do not obtain sufficient bass boost when using the circuit recommended by the manufacturer. The



circuit shown, when substituted for the *Clarkstan* circuit, will give a response flat within 2 db. from 50 to 10,000 cycles (when tested with use of a sweep frequency record) and a voltage output at 1000 cycles of 7 millivolts.

★★★

1948-1949 Automobiles

A Note to Our Subscribers

★★★

THE work of reporting and rating the automobiles which were discussed and listed in the August and September issues was exceptionally difficult, due to the confused and rapidly changing conditions in the trade as to prices and other factors, and because of frequent modifications of design and details being carried out by the manufacturers.

The judgments and ratings we have presented are believed to have been as accurate as was possible on the basis of the data available at the time they were prepared; because of the magnitude of the task, several months elapsed, in some cases, before the material could finally appear in print. As was pointed out in the July, August, and September articles, some of the ratings, particularly on those cars which had undergone drastic changes in design, must necessarily be regarded as tentative, until sufficient time has elapsed from the time of first manufacture of the new model to permit ac-

cumulation of information on actual records of the cars in service. (It is wholly impossible to predetermine completely the performance of such a complex mechanism as a modern automobile. No engineer, anywhere, has the capacity or knowledge which will permit fully dependable forecasting of the way a particular automobile made in 1948 will be performing in 1955 — or even in 1949.)

CR will be very glad to receive and study reports from subscribers who have purchased 1948 or 1949 model cars, giving their experience with them in general, characteristics, desirable and otherwise, of the new bodies, various defects experienced, servicing troubles and costs, gasoline and oil mileage, and any other useful, significant data on their cars. Such information will be carefully examined and will provide valuable additional material for our further reports on new automobiles.

Glass Wax—A New Household Cleaning Specialty

THERE has recently been very heavy newspaper and radio advertising for a product called *Glass Wax*, whose manufacturer claims that it is an "amazing chemical discovery" to give "lustre to glass and silver"; it is alleged to clean "30 kinds of dirt in 30 seconds." A weekly news magazine comments that *Glass Wax* has become a household word and is piling up a fortune (estimated as close to five million dollars a year, with nearly one third of that amount going into advertising) for its promoter. So popular has *Glass Wax* been as a result of a big radio and newspaper advertising campaign that imitators have already gotten into the field, and a half-dozen companies are making products of a similar character or with a similar name. Among the various cleaning tasks for which *Glass Wax* is recommended are cleaning of glass and metal surfaces, porcelain and tile, enamel, copper, brass, tarnish and stain from silverware. The price is 59c a pint, 98c a quart, and \$2.95 a gallon, and it appears that the makers (Gold Seal Co., 55 E. Washington St., Chicago 2) have succeeded in obtaining wide distribution of their product in a short time, through numerous dealers.

An analysis of the product indicates that it is somewhat less (as new chemical promotions usually are) than a new or "amazing chemical discovery" or a "miracle among cleansers." The composition of *Glass Wax* was found to be substantially as follows: water, 75%; hydrocarbon solvent (made of Stoddard Solvent, a well-known dry-cleaning preparation containing a high flash point petroleum naphtha, with some kerosene), 15%; abrasive, 7.5%; aqua ammonia (26°BE), 1.8%; emulsifying agent, 1.6%; with traces of a pink coloring material and a chemical to mask the odor. The abrasive consisted of diatomaceous earth of very fine particle size and a fine bentonite clay (acting as a suspending agent).

The name seems a misnomer because wax was not found in the product, or if it was present, it was present in too small a proportion to justify the name *Glass Wax*. The "invisible protective film" the manufacturer refers to is presumably derived from the emulsifying agent and the petroleum solvent, which would not give any important or significant resistance to fingerprints, as the maker alleges his product will.

The purpose of the various ingredients may



'GLASS WAX' A PRODUCT OF THE GOLD SEAL COMPANY
Cleans 30 Kinds of Dirt in 30 Seconds

The above is a reproduced part of one of the Gold Seal Company's newspaper advertisements.

be of interest to those who wonder how much mystery there is in chemical mixtures sold to the public as having magical and mystical properties. The water acts as a filler, spreader, and solvent for certain stains, such as those made by jelly or jam. The hydrocarbon solvents act as a solvent for fats, greases, and oils; also serve as a lubricant for the abrasive and prevent it from sticking to glass. The abrasive acts as a mechanical remover of insoluble particles; also acts as a polishing agent, and as a quick-drying agent by exposing to the air a very large surface containing the solvents. The ammonia present will saponify fats, and fatty acids, and thus help the detergent action. The emulsifying agent creates the water-oil emulsion and helps hold the abrasive in suspension. The emulsifying agent and a part of the petroleum solvent probably also supply the "invisible protective film" which the advertising refers to.

When the material was tested against the well-known *Bon Ami*, it was found that in one case there was hardly a distinguishable difference between the results obtained with the two products. In the other case, although results were better than with *Bon Ami*, the outline of water stains on glass was still visible after cleaning with *Glass Wax*.

There is a question whether the convenience and superiority that might be apparent in some unusual cases justify the difference in price between *Glass Wax* and the other material commonly used for the same general purpose, *Bon Ami*. *Glass Wax* is not a "wonder cleaner," and it does have the same disadvantage as *Bon Ami*, in that while it leaves glass clean, it creates dust; that is, much of the abrasive which it contains remains behind on furniture, on window sills, or is dispersed in the room.

Off the Editor's Chest

(Continued from page 2)

and high retail prices retard sales. The University of Illinois expert cited comments that there is little incentive under the present marketing system for farmers to produce high-quality birds.

Since there were bumper crops of grain this year, normal market conditions would have brought about a considerable reduction in many basic food prices, but government price supports have been successful, as usual, in preventing consumers from sharing financially in nature's bounty. As the magazine *Business Week* put it, "If the government weren't propping up farm prices, the boom [high prices for food and feedstuffs] might have sagged this week. The prospect of bumper crops has rocked the commodity markets. Except for government price pegs, all business would have felt the jolt." And we might add, prices would have come down.

Prices, in other words, are high because *the government planned them that way, and it continues to do so in the face of its own loud objections to inflationary developments and a constantly rising cost of living.* The bureaucrats and politicians may, at election time, appear to sympathize with consumers' demands for lower prices and look for faceless scapegoats like "monopolies" and "trusts," the dragons of the 1912 era, to blame for the high cost of living, but the inescapable fact is that the government *is committed by its own policies and laws which*

it approves and enforces to keep prices high — far higher than they would be if supply and demand were permitted to operate as in the days before government economists thought up their current policy of a "managed economy." As the *New York World Telegram* well characterized the situation in an editorial:

We have a bumper crop of potatoes, too. But to hold the price up, the government has bought 13,000,000 bushels of potatoes so far this year, and will buy another 9,000,000 bushels in the next few weeks. These potatoes are costing the government — the taxpayers — \$2.25 to \$2.72 a bushel. But they will be sold for alcohol at nine cents a bushel, or for animal feed at from less than a cent to 18 cents a bushel.

Meanwhile, the housewife is paying around \$3.50 a bushel for eating potatoes. . . .

When the campaign orators in your section start making moan over the poor consumer and the high cost of living, just ask them what action they expect to take if elected toward abandoning the present farm price support program which takes the tax dollars from the entire citizenry to subsidize one particular group — and a group which is not "underprivileged" in any sense, and has not been for many years. We shall await with interest subscribers reports on the answers they receive — from those candidates who can think of anything to say.

Painting and Preservation of Garden Tools

WHEN garden tools are put away for the winter, rust should be removed with emery paper or sand paper, and the exposed iron surfaces oiled or coated with black asphaltum paint for protection against moisture over the winter. This paint is inexpensive, readily obtainable, and gives adequate protection over the short period required. Because the paint will be worn off promptly when the tools are put to use during the next season, a more durable (and more expensive) paint coating is not required. Lawn mowers should be thoroughly cleaned of all grass clippings and oiled heavily on exposed surfaces (as well as in the bearings). The gasoline tank of power lawn mowers should be fully drained; otherwise gum will be formed, which may cause

trouble in starting when the appliance is to be used again in the spring.

The insecticide and weed-killer sprayers should be thoroughly cleaned. All dried material should be cleaned from the nozzles, and they should be wiped with an oily cloth, using care not to get oil on any rubber washers or plungers. The tank should be scrubbed with hot water; if necessary, sand and water may be whirled around inside it to remove rust and caked-on spray material. Any remaining rust spots should be sandpapered, and the clean metal should be painted with black asphaltum paint. This paint is resistant to sprays containing lime, which would quickly saponify and destroy an oil paint coating that would otherwise be used, on account of its greater durability.

Two Electric Heaters

Infraelectric Portable Heater

THE fuel oil shortage last winter in New York City brought forth a revival of the newspaper advertising of the *Infraelectric* heater, by department stores, at the regular price of \$29.95. This heater, as CR pointed out in the April 1947 BULLETIN, was in our opinion much too high priced for its value in use. Strangely enough in the same issue of the newspaper a heater which, from the illustration and claims, appeared to be identical, was advertised under a different name and from a different dealer as *Lectric-Aire* at \$10 f.o.b. factory and asserted to be a close-out of factory stock.

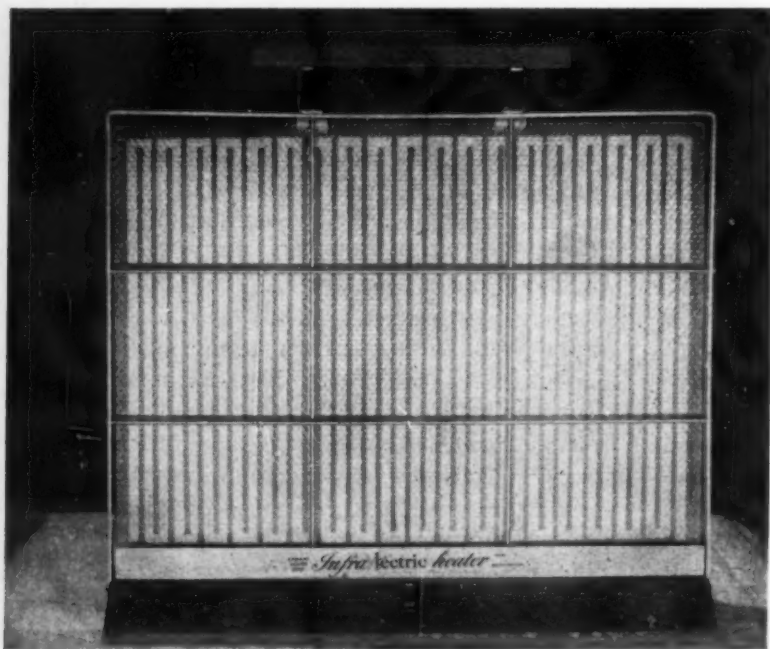
The *Infraelectric* heater was rated by CR as *C. Not Recommended*, because of misleading claims; these were thereafter

continued in advertising. One claim, for example, was that the heater heats by infra-red radiation. This is only a partial truth, as only about one-third of the total heat was produced in that manner. The most objectionable claim was in one of the advertisements for an "Electric Radiant Heater" which did not mention a brand name, that the appliance had an "Operating Cost Third Less Than Conventional Electric Heater — Uses No More Current Than Average Electric Iron — Will heat average room 15' x 15' in very cold weather." Anyone but an engineer or scientist would be justified in believing that this meant that for the same amount of heat supplied to the room, this heater would require one-third less electricity. This, of course, is wholly false, as all electric heaters of the same wattage supply the

same amount of heat to a room; and far from heating a 15 x 15 ft. room in severe cold weather, this heater would produce about enough heat for a space of about one-quarter of that area.

There was a further misleading intimation of some special and mysterious properties of these heaters in the phrase, "a mysterious, secret new formula glass which had the miraculous quality of transforming electricity into heat at low cost." If this means at low manufacturing cost, it is doubtless true, but in that case, the \$29.95 selling price was wholly unjustified. The layman thinks it means, of course, an especially efficient means of heating by electricity, which the appliance does not provide and which the advertising manager of The New York Times, and any other advertising medium which has accepted this type of advertising, should have known was a wholly unwarranted and misleading claim. The claim "Knock it over—it won't break" might also give a false implication, for the glass of the *Infraelectric* heater CR tested broke when it was knocked over and allowed to remain in that position with the current on.

Another objectionable feature was the statement "especially safe for use in bathroom." No portable electric appliance such as a heater, or radio, or ultraviolet lamp should ever be used in the bathroom. A heater of this type could very readily be placed on a chair close to the tub by a child or person not cognizant of the danger, whence it could easily



Infraelectric Heater

be upset and fall into the tub, with fatal results. Accidents of this type have occurred, and it is never safe to assume that some exceptional combination of persons and circumstances may not permit a similar accident to occur in any home. We have rarely seen short advertisements containing so many misrepresentations as have been found in department store (including one of New York City's most respected home furnishing dealers) and mail-order dealer advertising of this electric heater. Newspapers, magazines, and department stores have an obligation to their customers to call in an engineer or scientist when advertising is prepared or submitted that involves technical considerations on which their own staffs are not qualified by special professional education and training to pass judgment.

Electric Radiant Heater

AN unusual type of heater sold by leading houseware stores consists of a ceramic covered nichrome heater element within a 4 ft. long Pyrex glass tube. The tube, about 1 in. outside diameter, is mounted on an aluminum and white



Talmer Electric Radiant Heater, Model 2

metal case having a polished aluminum reflector. It is intended to be placed above a door or window or on the wall; a 9½ ft. cord with plug is provided. The coils do not glow visibly, and it was claimed that the heater never became hot enough to injure the skin or fabrics. This was found to be wholly incorrect, for cheese-cloth in contact with the glass tube was badly scorched (turned black) after a few minutes contact, and the surface of the glass tube reached a temperature of over 500°F, which is above the melting point of tin, and about 100° above the temperature at which most solder melts. (The hand can stand perhaps 130°F in contact with metal, 150°F with other materials.)

The heater was also advertised as being absolutely safe, especially for use in bathroom or nursery. Unfortunately the heater was *not* safe, for it showed

excessive leakage currents, under humidified conditions such as would occur in the bathroom. This alone would justify a *C-Not-Recommended* rating. Furthermore, it is important to bear in mind that portable plug-in electrical devices of any type should never be used in the bathroom, where the risk is great of fatal shock or injury from such devices even in cases where they would not normally involve leakage currents of considerable magnitude.

C. Not Recommended

Infraelectric. \$29.95 (in 1947). (See April 1947 Bulletin, p. 23.)
Talmer Electric Radiant Heater, Model 2 (Talmer Industries, Seattle; was sold by a leading N.Y.C. housewares dealer) \$15.75. Ac-dc, 660 watts, 115 volts. Excessive shock hazard; temperature of hot surfaces far higher than manufacturer's claim and high enough to char fabrics, and of course to cause severe burns to a user (contrary to claims).

★ ★ Corrections and Emendations to Consumers' Research Bulletins ★ ★

Tessar Lenses
 Page 23
 Col. 2
 May '48

In the listing of the *AnSCO Automatic Reflex* camera, reference was made to the *AnSCO Anastigmat* lens being inferior to a "good Tessar." Some subscribers inferred from this that CR considered that all *Zeiss Tessar* lenses were good. This is not the case; for some years before the war the quality of *Tessars* was definitely not uniform.

Gas Ranges
 Page 8
 Col. 2-3
 Mar. '48

Change second half of parenthetical statement re burner efficiency to read, "a CP stove must have regular top burners with an efficiency of 45% and giant burners

with an efficiency of approximately 41%.

Delete sentence beginning, "The giant burners also all met A.G.A. requirements but only three met CP requirements" and substitute, "All the giant burners met A.G.A. and CP requirements."

Page 9
 Col. 2

In sentence reporting *Universal-Elon* giant burner efficiency as 42.5%, delete comment, "below CP requirements."

Hydraulic Brake Fluids

CONSUMERS are likely to suppose that fluids for hydraulic brakes are some simple substances such as oil, ethylene glycol, or other commonplace material or mixture chosen to give the right viscosity and ability to remain fluid at low temperatures approaching -50°F. Hydraulic brake fluids are actually made of a variety of substances, but good ones are not made of petroleum oil. However, some 8 million gallons of petroleum-base hydraulic and recoil fluid were sold, as surplus war materials, much of which undoubtedly got into the brake system of automobiles, to the disadvantage of

the consumers who had mistakenly applied them to automobile use. (CR's BULLETIN of January 1948, page 29.)

Various trade products may contain castor oil, butyl alcohols, Methyl Carbitol, Cellosolve, or similar substances. One recently analyzed (sold by Sears, Roebuck & Co. under the name *Allstate Hydraulic Brake Fluid*; 49c for a pint tin) was found to have the following approximate composition: Amyl alcohols (pentasol), 50%; castor oil, 19%; dipropylene glycol, 24%; water, 7%.

Abridged Cumulative Index of Previous 1948 Issues Consumers' Research Bulletin

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Air-conditioning units†	Aug., 12-15
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ten-watt high-fidelity, for home assembly†	Aug., 31
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Automobiles, 1948, 1949†	July, 13-15; Aug., 5-9; Sept., 5-14
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Beard softener, before-shave†	July, 30
Bed rails, extenders†	July, 30
Bicycles†	June, 5-7
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Cameras, foreign-made, discussion†	Mar., 29
miniature†	May, 23-24
motion picture†	Feb., 18
twin-lens reflex†	May, 23
Cleaner, household†	May, 30
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Cleaners and detergents, soapless†	Mar., 25-27
Clothes driers†	June, 20-21
Coffee, soluble†	June, 30
Corn and peas, canned†	July, 7-11
Corrections and emendations†	Jan., 13; Feb., 17; May, 10; Aug., 15; Sept., 14
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Dandruff, liquid for treating (Sulfoam)†	Aug., 30
Dishwashing machines, three automatic, final report†	Mar., 23-24
portable†	Feb., 9-10
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Eggs and meat, high nutritional quality	Sept., 4
Elm diseases	Sept., 15-16
Fingernail troubles due to "base" polish	Aug., 3
Fire alarm device†	Jan., 26; Aug., 30
Fire extinguishers, methyl bromide	Aug., 18-19
Floor polisher†	Jan., 11
Floor-polishing attachments, vacuum cleaner†	Feb., 13
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Gasoline, automobile†	Apr., 18-19
Hair clippers, electric†	Aug., 23-24
Hair tonic, claims†	Sept., 29
Hair tonics, ineffective†	Jan., 14-16
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Inverter, electronic, for improving electric shaver operation†	Sept., 25-26
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home-built†	Apr., 13-18
Lights, night†	Mar., 33-34
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Lipsticks†	June, 18-19
Loud-speaker, high-fidelity†	Jan., 13

	Month and Page
Mattresses†	July, 11-12
Mayonnaise†	Aug., 10-11
Motion pictures†	each issue
Nail lacquers†	May, 9-10
Outboard motors†	June, 8-10
Peas and corn, canned†	July, 7-11
Phonograph pickups†	Mar., 21-22; May, 19-20
Phonograph records†	each issue
new long-playing†	Sept., 24-25
Phonograph turntable units, low-priced†	Feb., 23-24
Plastic films for household use†	July, 21-22
Polisher, electric, floor†	Jan., 11
Powder, face†	Apr., 11-12
Preamplifier, GE†	Aug., 22-23
Preservative, wood†	July, 30
Projectors†	Feb., 18-21; May, 24
Radios, AM-FM†	Feb., 16-17; May, 16
automobile†	Feb., 14
clock, table-model†	June, 21
converter, FM†	May, 20
faults, and television	Feb., 24-25
FM, pre-emphasis and de-emphasis†	Jan., 21
phonograph combination†	May, 18; June, 24
receivers, table-model†	Mar., 11; May, 17-19
receivers and tuners, FM, faulty low-priced table models Jan., 8	
small, potential shock hazard	Sept., 3
tuner, AM†	June, 24
AM-FM†	Feb., 16
Ranges, gas†	Mar., 5-10
Rat control methods†	Mar., 12-15
Rayons, winter, fading in storage	Sept., 29
Recorders, wire†	Jan., 23-25
Refrigerant, hazardous	Sept., 17
Refrigerators, four electric†	Mar., 16-18
Rubber footwear, men's and women's†	Apr., 9-10
Rugs and carpets—II	Jan., 16-18
Scale, baby†	Apr., 10; 29, 30
Scouring powder (Old Dutch Cleanser)†	Apr., 30
Shampoo, synthetic detergent (Halo)†	Apr., 29
misbranding†	Apr., 4; June, 4
Sheets, crib, waterproof†	June, 19-20
Shirt, man's white†	Apr., 19
Shoes, waterproofer for soles†	June, 30
children's†	May, 5-8
Soap substitute (Leisure)†	Mar., 38
Soapless cleaners and detergents	Mar., 25-27; Sept., 18-22†
Soaps, toilet†	Aug., 16-17
soapless, new uses	Aug., 3
Stain remover kit†	Apr., 12
Television, present boom	July, 17-20
table-model†	June, 22
Tennis balls†	Sept., 23
Thread, sewing†	Jan., 12-13
Tires, automobile†	Jan., 19-20
Toilet seats for babies†	Jan., 25-26
Tooth decay	July, 3
toothpastes and powders, as cause	June, 29
Vacuum cleaners†	Jan., 9-11; May, 21-22
for autos†	July, 24
Washing machines, automatic†	Feb., 5-6; June, 11-14, 17
availability of parts	May, 25
non-automatic†	June, 23
Water heaters, tankless†	May, 13-16

†indicates that listings of names or brands are included.



Ratings of Motion Pictures



THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, Cue, Daily News (N.Y.), The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.), and Unbiased Opinions of Current Motion Pictures which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure	hist—founded on historical incident
biog—biography	mel—melodrama
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)	mus—musical
car—cartoon	mys—mystery
com—comedy	nov—dramatization of a novel
cri—crime and capture of criminals	rom—romance
doc—documentary	soc—social-problem drama
dr—drama	trav—travelogue
fan—fantasy	war—dealing with the lives of people in wartime
	wes—western

A	B	C	
—	5	4	Abbott & Costello Meet Frankenstein.....com A
—	4	—	Adventures in Silverado.....wes AYC
—	6	4	Adventures of Casanova.....adv A
—	2	3	Adventures of Gallant Bess.....wes-c AYC
—	3	5	Alias a Gentleman.....com A
2	8	8	All My Sons.....dr A
—	5	3	Angelina.....propaganda-dr A
—	4	1	Angels' Alley.....com AYC
—	6	13	Anna Karenina.....dr A
—	8	8	Another Part of the Forest.....dr A
—	6	2	Antoine et Antoinette.....com A
—	5	9	April Showers.....mus-com A
1	3	13	Arch of Triumph.....war-dr A
—	7	9	Are You With It?.....mus-com AY
—	4	3	Argyle Secrets, The.....cri-mel A
—	6	—	Arizona Ranger, The.....wes A
—	2	4	Arthur Takes Over.....com A
—	3	3	Assigned to Danger.....cri-mel AY
2	5	6	Babe Ruth Story, The.....mus-biog AYC
—	3	9	Bad Sister.....nov A
—	12	5	Berlin Express.....war-mel AY
—	5	1	Best Man Wins.....com A
—	—	3	Betrayal, The.....mel A
—	3	8	Beyond Glory.....dr A
3	7	8	B. F.'s Daughter.....nov A
1	10	5	Big City.....mus-dr AYC
5	9	2	Big Clock, The.....cri-mel A
—	6	3	Big Punch, The.....dr A
—	—	6	Big Town Scandal.....mel AYC
—	7	—	Black Arrow, The.....adv AY
—	3	10	Black Bart.....wes-c AY
—	1	7	Blind Desire.....dr A
—	2	3	Blonde Ice.....mel A

A	B	C	
—	4	1	Blondie's Reward.....com AYC
—	3	2	Bold Frontiersman, The.....wes AYC
1	8	4	Bride Goes Wild, The.....com A
—	9	5	Brothers, The.....dr A
—	5	4	Caged Fury.....mel AY
—	2	3	California Firebrand.....mus-wes-c AYC
—	5	3	Campus Honeymoon.....mus-com A
—	—	5	Campus Sleuth.....mus-com AY
—	9	3	Canon City.....doc-cri-mel A
—	2	3	Carson City Raiders.....wes AYC
—	6	8	Casbah.....mus-mel A
—	7	1	Challenge, The.....mys-mel AY
—	2	2	Champagne Charlie.....mus-com AY
—	3	3	Checkered Coat, The.....mel AY
—	1	3	Clandestine.....war-dr A
—	1	8	Close-Up.....war-mel A
—	1	6	Cobra Strikes, The.....cri-mel A
—	6	—	Confessions of a Rogue.....com A
1	6	1	Coroner Creek.....wes-c A
—	4	2	Counterfeiters, The.....mel A
—	2	3	Crime and Punishment.....dr A
—	—	3	Crossed Trails.....wes AYC
—	4	1	Dammed, The.....war-dr A
—	1	5	Daredevils of the Clouds.....mel AY
—	11	3	Date With Judy, A.....mus-com-c AY
—	2	5	Day of Wrath.....mel A
—	7	6	Dear Murderer.....cri-mel A
—	10	4	Deep Waters.....dr-c AYC
—	8	2	Design for Death.....war-doc A
—	1	3	Devil's Cargo.....mys-mel A
—	—	5	Docks of New Orleans.....cri-mel AY
—	7	8	Dream Girl, The.....com A
—	1	8	Dreams That Money Can Buy.....fan-c A
—	9	—	Dude Goes West, The.....wes-com AYC
2	14	1	Easter Parade.....mus-com-c AYC
—	3	3	Embraceable You.....cri-mel A
3	13	2	Emperor Waltz, The.....mus-com-c AY
—	1	6	Enchanted Valley, The.....dr-c YC
—	2	7	End of the River.....dr A
—	7	5	Escape.....nov A
—	3	1	Eyes of Texas.....mus-wes-c A
—	1	6	Fanny.....dr A
—	5	1	Farrebique.....dr A
—	5	5	Feudin', Fussin', and A-Fightin'.....mus-com AYC
—	—	3	Fighting Back.....mel AYC
—	10	7	Fighting Father Dunne.....dr AYC
—	5	1	Fighting Mad.....mel AY
—	—	3	First Opera Film Festival.....mus-dr A
—	3	5	Fledermaus, Die.....mus-com-c A
—	4	8	Foreign Affair, A.....mus-com A
2	11	3	Fort Apache.....wes AYC
—	1	12	Four Faces West.....wes-dr AYC
—	1	5	French Leave.....com AY
—	3	2	Fric-Frac.....com A
—	4	2	Friend Will Come Tonight, A.....war-mel A
—	9	3	Fuller Brush Man, The.....cri-com A
—	9	3	Fury at Furnace Creek.....wes AYC
—	6	1	Gallant Legion, The.....mus-wes AYC
—	4	3	Gay Intruders, The.....com A
—	—	3	Gelosia.....cri-dr A
—	12	3	Give My Regards to Broadway.....mus-com-c AY
—	5	1	Good Sam.....com A
—	12	2	Green Grass of Wyoming.....dr-c AYC
—	1	4	Guns of Hate.....wes AYC
—	—	9	Half-Past Midnight.....mys-mel A
—	2	4	Hamlet.....dr A
—	2	11	Hatter's Castle.....mel A
—	1	3	Hawk of Powder River, The.....wes AYC
—	3	13	Hazard.....com A
—	—	5	Heart of Virginia.....dr AYC
—	2	3	Henry IV.....hist-dr A
—	2	6	Here Comes Trouble.....com-c A

A	B	C		
—	12	—	Holiday Camp	com A
—	3	—	Hollow Triumph	mel A
1	8	6	Homecoming	war-dr A
—	4	2	Hunted, The	mel A
—	3	4	I Became a Criminal	cri-mel A
—	3	5	I, Jane Doe	mel A
5	12	2	I Remember Mama	com AYC
—	1	7	I Wouldn't Be in Your Shoes	cri-mel A
1	5	9	Ideal Husband, An	com-c A
—	2	4	Idiot, The	dr A
1	6	5	If You Knew Susie	mus-com AYC
—	1	3	Illegals, The	doc-dr A
—	5	3	Inside Story, The	com AYC
4	12	2	Iron Curtain, The	doc-mel AYC
—	3	13	Jassy	nov-c A
1	5	3	Jenny Lamour	mus-mel A
—	4	2	Jinx Money	mys-mel AY
1	3	—	Julia Misbehaves	com A
3	7	3	Key Largo	mel A
—	—	3	King of the Bandits	wes AYC
—	1	5	King of the Gamblers	mel A
—	—	5	Lady at Midnight	mys-mel AY
—	5	12	Lady from Shanghai, The	mus-mel A
1	3	1	Larceny	mel A
—	4	4	Let's Live Again	com A
—	6	12	Letter from an Unknown Woman	dr A
—	1	5	Lightnin' in the Forest	cri-com A
2	8	1	Lost One, The	mus-dr A
—	4	10	Lulu Belle	mus-mel A
—	—	3	Lysistrata	dr A
—	2	6	Madonna of the Desert	mel AY
—	1	7	Man from Texas, The	wes A
—	1	12	Man of Evil	mel A
—	6	3	Man-Eater of Kumaon	mel A
1	1	1	Marius	com A
—	8	4	Mating of Millie, The	com AY
—	3	6	Meet Me at Dawn	com A
3	8	3	Melody Time	mus-car-c AYC
—	5	2	Michael O'Halloran	dr AYC
—	3	6	Mickey	mus-com-c AYC
—	4	5	Mine Own Executioner	mel A
—	7	6	Miracle Can Happen, A	com A
—	3	1	Miracle in Harlem	mus-mel-c A
3	6	8	Miracle of the Bells	dr AYC
—	2	3	Money Madness	cri-mel AY
1	12	2	Mr. Blandings Builds His Dream House	com A
—	4	2	Mr. Orchid	war-dr A
—	9	2	Mr. Peabody and the Mermaid	fan A
—	—	8	Mr. Reckless	mel A
—	3	3	Murderers Among Us	war-dr A
—	3	1	Music Man	mus-com AY
—	3	4	My Dog Rusty	dr AY
—	4	2	Mystery in Mexico	mys-mel A
—	2	4	Nails	dr A
—	7	1	Night Has a Thousand Eyes	mel A
—	6	1	Noose Hangs High, The	com AYC
—	5	1	Northwest Stampede	mel-c AYC
—	3	1	Not Guilty	mel A
—	7	5	October Man, The	cri-mys A
—	2	3	Oklahoma Badlands	wes AYC
—	4	4	Old Los Angeles	mus-wes AYC
—	9	7	On An Island With You	mus-com-c AY
—	1	2	Overland Trails	wes AYC
2	7	2	Paisan	war-dr A
—	—	3	Partners of the Sunset	mus-wes AY
—	1	4	Passionelle	dr A
2	8	3	Pearl, The	dr A
—	—	3	Phantom Valley	mus-wes AYC
—	3	7	Piccadilly Incident	war-dr A
1	12	4	Pirate, The	mus-dr-c A
—	5	1	Pitfall, The	mel A
—	2	6	Port Said	mel AY
—	3	3	Portrait of Innocence	dr A
—	2	5	Race Street	cri-mel A
—	4	2	Rachel and the Stranger	mus-dr A
—	—	3	Range Renegade	mus-wes AYC
—	5	2	Raven, The	mys-mel A
—	7	4	Raw Deal	cri-mel A
—	6	1	Razzia	mel A
5	2	1	Red River	wes-dr A

A	B	C		
—	4	7	Return of the Bad Men	wes AYC
—	5	5	Return of the Whistler, The	mys-mel AYC
—	8	6	River Lady	mel-c A
—	4	2	Rocky	dr AYC
—	11	1	Romance on the High Seas	mus-com-c A
—	—	3	Rossini	mus-biog A
—	6	5	Ruthless	dr A
—	3	11	Saigon	mel A
—	7	8	"Sainted" Sisters, The	dr A
—	8	6	Scudda-Hoo! Scudda-Hay!	nov-c AYC
4	11	3	Search, The	war-dr AY
—	1	6	Secret Service Investigator	cri-mel AY
—	4	5	Shaggy	dr-c AYC
—	1	2	Shanghai Chest, The	mys-mel AY
—	1	4	Shed No Tears	cri-mel A
—	1	5	Showtime	mus-com A
—	8	10	Sign of the Ram, The	dr A
—	—	4	Silent Conflict	wes AYC
—	3	9	Silver River	wes-dr A
4	12	1	Sitting Pretty	com A
—	2	2	Six-Gun Law	mus-wes AYC
—	3	4	16 Fathoms Deep	mel-c AY
—	6	5	Smart Woman	dr A
—	5	6	Smugglers, The	mel-c A
—	8	9	So Evil My Love	cri-mel A
—	5	2	So This Is New York	com A
—	2	3	Son of the Regiment	war-dr A
—	2	2	Song of Idaho	mus-wes AY
—	3	2	Sorry, Wrong Number	mel A
—	3	2	Southern Yankee, A	com AYC
—	2	5	Speed to Spare	mel A
—	3	2	Spiritualist, The	mys-mel AY
—	2	2	Spring	mus-com A
—	1	4	Stage Struck	cri-mel A
4	9	3	State of the Union	dr A
—	5	—	Strawberry Roan, The	mus-wes-c AYC
1	14	—	Street With No Name, The	cri-mel A
1	10	4	Summer Holiday	mus-com-c A
—	—	6	Sword of the Avenger	dr-c AY
—	1	3	Take My Life	mys-mel A
—	2	7	Tap Roots	dr-c A
—	5	4	Tarzan and the Mermaids	adv AYC
—	3	4	Texas, Brooklyn and Heaven	com A
—	5	2	That Lady in Ermine	mus-com-c A
1	3	1	They Are Not Angels	war-dr A
—	3	4	Thirteen Lead Soldiers	cri-mel AY
—	4	1	Thunderhoof	mel-c A
—	2	2	Timber Trail, The	mus-wes-c AYC
—	11	5	Time of Your Life	com A
—	5	10	To the Victor	war-mel A
—	—	4	Tornado Range	mus-wes AYC
—	1	5	Train to Alcatraz	mel A
—	—	6	Trapped by Boston Blackie	mys-mel AY
—	3	3	Triggerman	wes AYC
—	4	1	Twisted Road, The	cri-dr A
—	3	2	Two Guys from Texas	mus-com-c AY
—	1	3	Under California Stars	mus-wes-c AYC
—	3	5	Untamed Fury	mel A
—	6	11	Up In Central Park	mus-com A
—	—	5	Vacation Days	mus-wes AYC
—	2	3	Variety Time	mus-com AY
—	4	4	Velvet Touch, The	dr A
—	1	9	Vicious Circle, The	cri-dr A
—	3	2	Voyage Surprise	com AY
—	5	5	Wallflower	com A
—	3	8	Walls of Jerico, The	dr A
—	4	4	Waterfront at Midnight	cri-mel A
—	1	2	West of Sonora	mus-wes AYC
—	—	4	Westward Trail, The	mus-wes AY
—	—	3	Where Words Fail	mus-dr A
—	1	4	Whirlwind Raiders	mus-wes AYC
—	—	3	Whispering City	mys-mel A
—	—	3	White Stallion	wes AYC
—	4	2	Who Killed Doc Robin?	cri-com AYC
—	3	1	Who Killed Santa Claus?	dr A
—	—	4	Will It Happen Again?	war-doc A
—	5	1	Winner's Circle, The	dr-c AYC
—	2	13	Winter Meeting	dr A
—	10	4	Woman in White, The	cri-mel A
—	4	3	Wreck of the Hesperus, The	dr AYC
—	3	—	Your Red Wagon	dr A

The Consumers' Observation Post

(Continued from page 4)

SCARCITY OF HOUSING and the high cost of building are due in part to antiquated building codes. On more than one occasion it has been discovered that those building codes are designed to siphon off consumers' dollars into the pockets of skilled tradesmen, such as plasterers, electricians, and plumbers. Attempts to modernize these codes and make use of new technological developments have met with determined resistance by both workmen and contractors who do not want their "take" reduced. In Milwaukee, for example, during the war a liberalized ordinance had permitted the use of non-metallic sheathed cable in wiring houses which was found to be quite satisfactory in actual use and economical to install. This past spring, however, a mob of 600 union electricians and contractors' men crowded into the meeting of the Milwaukee Common Council and scared the alderman into tabling the proposal to make the amended code permanent, according to an account in Electrical Merchandising. As a result it costs Milwaukee home owners from \$85 to \$115 or more for a wiring job on an electric range, which, the magazine reports can be done elsewhere for something like \$45. In many localities numbers of plumbing associations refuse to install fixtures that the prospective home owner has purchased himself from a mail-order house, for example, or will perform the job only at an exorbitant price so as to make up for the profit they missed on the sale. The present Administration, which has made a great to-do about the hardships of consumers who lack proper housing, has shown no inclination whatever to correct these ob-



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vious anti-consumer practices, though to the layman they look exactly like the monopoly practices and restraint of trade that the government has found highly reprehensible, when the case was one that did not involve exactions by union labor.

* * *

RECENTLY TESTED:

Safeway Brush Top Spot Remover (Distributor, Safeway Chemical Co., Cleveland), 15c at F. W. Woolworth stores. This consists of a small bottle with a removable sealing cap over a plush or pile fabric surface through which the cleaning fluid is filtered. The device is really efficient and handy in removing small spots on garments when an absorbent pad is placed under the spot.

Vita-Fluff (Duon, Dayton 1, Ohio) is a yellow paste that sells at \$1 for a 4-oz. jar; it is labeled the "World's finest shampoo." Upon analysis this product was found to be a sodium salt or sulfated lauryl alcohol (a soap substitute), 30.6% (including about 10% sodium sulfate); cetyl alcohol, 7.2%; perfume, about 1%; sodium bicarbonate (baking soda), 0.4%. The remainder, nearly 61%, was water. A small amount of yellow dye was present. Cetyl alcohol is an emollient added for the purpose of contributing a desirable smoothness to cosmetic products and to provide perhaps in some degree a superfatting effect such as is accomplished in soap by including a small amount of uncombined fat. It may be that the superfatting effect has particular value in a shampoo of this type using a synthetic detergent, as a means of counteracting at least a part of the undesirable effect of the synthetics, in removing too much of the natural oil from the scalp and hair.

Breeze (Lever Bros.) is a soapless detergent sold in grocery stores and housewares departments at 35c per package (approximately 9 oz.). On analysis it was found to have the following approximate composition: 62% sodium sulfate, 30% sulfonated synthetic detergent, 6% sodium chloride, 1% sodium metaphosphate, and 1% water of hydration. This product is seen, therefore, to be a typical soapless detergent with sodium sulfate and sodium chloride which are usually found present with the synthetic detergent and have some action as "builders." Sodium metaphosphate is the chemical name for the well-known product Calgon, a very satisfactory though expensive water softener. Sulfonated detergents have been recommended for washing woolen garments and for washing in cold water, where they are a much better cleanser than soap.

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PHONOGRAPH RECORDS

Walter F. Gruening

Please Note: In the ratings AA indicates

recommended; A, recommended; B, intermediate; C, not recommended.

ORCHESTRA

Stravinsky: Symphony of Psalms. harmonic Orchestra and the London Philharmonic under Ansermet. 6 sides, English Decca Set 52. \$7.50. A work which omits violins and violas and a first performance by the Boston Symphony in 1930 has not been programmed often — anywhere. Powerful performance and first-rate recording.

Interpretation AA
Fidelity of Recording AA

Beethoven: Symphony No. 4 in Major ("Choral"). Boston Symphony Orchestra under Koussevitzky with vocal soloists Yeend, Lloyd, Albrecht, and the Berkshire Music Festival Chorus. 16 sides, RCA Victor Set 1190. \$11. Beethoven's 4th symphony, though not his best. Koussevitzky's performance lacks the essential drive found in Ormandy's recording. Columbia Set 591. Koussevitzky appears to be hanging out detail which, even if granted as a work of art, is not entirely successful because of throaty, throaty recording and surface noise. The last movement with a satisfactory vocal quartet and chorus.

Interpretation B
Fidelity of Recording B

Borodin: Symphony No. 2. Chicago Symphony Orchestra under DeFazio. RCA Victor Set 1225. \$4.75. An intensely emotional work seldom played. Energetic performance. Though inclined toward brashness, is infinitely more competitive Mitropoulos-Columbia Set 528 which has superseded despite the splendid reading.

Interpretation AA
Fidelity of Recording A

Episodes (5 sides) & Billy the Ballerina. Dallas Symphony Orchestra under DeFazio. RCA Victor Set 1214. \$4.75. The Ballet Russe de Monte Carlo has made this work with great success since 1924. The stretches of the composition, which draws on folk music, must be enhanced by stage action. Spirited performance and best recording to come out of Dallas.

Interpretation AA
Fidelity of Recording A

Diamond: Music for Shakespeare's "Romeo and Juliet" (5 sides) & Overture to "The Tempest" (1 side). The Little Orchestra Society under Scherman. Columbia Set 751. \$4.75. This suite, intended to convey the beauty of Shakespeare's drama, leaves me cold. Resourceful performance vividly reproduced.

Interpretation AA
Fidelity of Recording AA

Dvorak: Slavonic Dances. Cleveland Orchestra under Szell. 6 sides, Columbia Set 756. \$4.75. Two furians, a polka, a mazurka and a Serbian Kolo make up this album of predominantly high spirited, engaging dances. At times Szell pushes the orchestra to the limit. Recording offers excellent transients and brilliant highs, but could stand more body.

Interpretation A
Fidelity of Recording A

Williams: Fantasia on a Theme by Tallis. Minneapolis Symphony Orchestra under Mitropoulos. 4 sides, Columbia Set MX 300. \$3.50. Commendable performance of a beautiful work. Challenges Victor Set 769 which offers greater depth, richness and smoothness in recording, but fewer highs, less volume, and more surface noise.

Interpretation AA
Fidelity of Recording A

Genesis Suite. Janssen Symphony of Los Angeles under Janssen with Narration by Edward Arnold. 10 sides, Artist Set J S 10. \$7.56. This unimpressive work consists of the narration of the Bible's first chapter and individual orchestral movements by Milhaud and

formed. Uneven recording. Interpretation AA
Fidelity of Recording B

CONCERTO

Beethoven: Concerto No. 4. Casadesu (piano) with the Philadelphia Orchestra under Ormandy. 8 sides, Columbia Set V 744 (vinylite). \$9. Frequently regarded as the greatest piano concerto. Casadesu plays with polish and facility; the orchestra pitches in remarkably well. Full-bodied recording for the most part, though the piano lacks luster. Nearly inaudible surfaces. My favorite competitor, five-year-old Schnabel-Victor Set 930, offers a more robust, penetrating performance, slightly brighter though less rich recording and more surface noise. Schnabel wins.

Interpretation A
Fidelity of Recording A

VOCAL

Debussy: La Damselle Elue. Philadelphia Orchestra under Ormandy with Sayao, Nadell, and The Women's Chorus of the University of Pennsylvania. (5 sides) & *De Fleurs*. Sayao (soprano) (1 side). Columbia Set 761. \$4.75. Excellent performance of a fragile work that foreshadows the mature Debussy. Sayao's voice stridently recorded.

Interpretation AA
Fidelity of Recording A

De Falla: Seven Popular Spanish Songs. Carmen Torres (soprano). 4 sides, RCA Victor Set 1223. \$3.50. Characteristic folk tunes I have long enjoyed in the performance by Conchita Supervia which, if found under Decca or any other label, is still the group of disks to buy despite ancient recording. Miss Torres sings with some feeling, though shrilly, and without the touch which makes for consummate artistry. Admirable balance between voice and piano.

Interpretation B
Fidelity of Recording A

Romantic Melodies. Jeanette MacDonald (soprano). 8 sides, RCA Victor Set MO 1217. \$5. Miss MacDonald's pretty voice is most persuasive in "A Perfect Day" and "I Love You Truly," less so in the musical comedy and concert numbers.

Interpretation B
Fidelity of Recording A

Songs of the Auvergne. Madeleine Grey (soprano). 6 sides, Columbia Set 758. \$4.75. Deleted individual records re-instated in an album. They present Canteloube's colorful arrangements of eleven fascinating folk songs from one of France's oldest provinces. Columbia should have provided translations. Mme. Grey's voice lacks richness, but stylistically she is superb. Voice satisfactorily recorded, but the orchestra sounds tubby. Despite shortcomings, a distinctive set.

Interpretation AA
Fidelity of Recording B

Strauss: Vocal Waltzes. Miliza Korjus (soprano). 4 sides, RCA Victor Set MO 1221. \$3.50. Vocal gymnastics. I suppose there are words, but I understood little more than "I'm in Love with Vienna." Miss Korjus fluffs few notes. Particularly fine orchestral accompaniment and recording.

Interpretation A
Fidelity of Recording AA

Jennie Tourel Sings Offenbach (mezzo-soprano). 4 sides, Columbia Set MX 299. \$2.90. Sheer delight! Three tuneful arias from "La Perichole" plus the "Barcarolle" from "Tales of Hoffman" in which Miss Tourel sings both parts. Praiseworthy recording.

Interpretation AA
Fidelity of Recording AA

LIGHT AND MISCELLANEOUS

The American Banjo Album. Rex Schepp (banjo). 6 sides, RCA Victor Set P-218. \$3.25. "Holiday for Strings," "Down South," "Old Black Joe," etc., confirm early impressions that not even an expert like Mr. Schepp can do much to overcome the severe limitations of a banjo.

Interpretation AA
Fidelity of Recording A

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